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ABSTRACT

The purpose and direction of the Office of Student Financial Aid (OSFA) quality improvement program are described. The background and context for the Pell Grant quality control (QC) design study and the meaning of QC are reviewed. The general approach to quality improvement consists of the following elements: a strategic approach that enables OSFA to target technical assistance on high error-prone areas, while proceeding with an overall design strategy; an emphasis on both manual and automated QC measurement, enhancing existing databases and procedures; and an emphasis during the first year of the quality improvement program on the development of the measurement component of the program. The design for the OSFA quality improvement program is discussed, with attention to opportunities for quality improvement in the current delivery system. Also considered is the overall strategy for the improvement program that concentrates on institutional QC, external QC, internal OSFA QC, and a QC management information system. The critical targets for internal quality improvement are identified and measures are proposed. Finally, an implementation plan for the improvement program emphasizes the role of the corrective action component, implementing corrective action using the critical activities, and priorities for ongoing quality improvement. (SW)

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OFFICE OF STUDENT FINANCIAL AID QUALITY IMPROVEMENT PROGRAM

DESIGN AND IMPLEMENTATION PLAN

Submitted to

Office of Student Financial Assistance
Department of Education

Contract No.: 300-80-0952

by

ADVANCED TECHNOLOGY, INC.
12001 Sunrise Valley Drive
Reston, Virginia 22091

SEPTEMBER 1983

HE018133

PREFACE

The Office of Student Financial Assistance (OSFA) of the Department of Education has contracted with Advanced Technology, Inc., of McLean Virginia, and its subcontractor, Westat, Inc., of Rockville, Maryland, to conduct a three-year quality control project (Contract No.: 300-80-0952). The focus of the project is the Pell Grant Program, the largest of the student grant programs administered by OSFA. The objective of Stage Two (Part One) of the project is to design a quality control system to measure and analyze program performance. The reports completed to date under Stage Two (Part One) include:

Quality Control (QC) System Development for the Pell Grant Program: A Conceptual Framework	March, 1982
Action Plan for Quality Control System Design: A Working Paper	May, 1982
A Comparison of Title IV Student Assistance Delivery Systems	June, 1982
Preliminary Quality Control System Design for the Pell Grant Program	June, 1982
A Framework for a Quality Control System for Vendor/Processor Contracts	September, 1982
Recommendations for Improving Quality in the Campus-Based Program: FISAP Process	September, 1982
Technical Specifications for Conducting an Annual Assessment of Overall Payment Error in the Pell Grant Program	September, 1982
Technical Specifications for QC System Enhancements to the Manual GSL Interest Billing Process	November, 1982
Corrective Action Framework for the Office of Student Financial Assistance	December, 1982
Quality Control Procedures Manual for Manually Processed Interest Payments Guaranteed Student Loan Program	December, 1982
Quality Assurance for Vendor/Processor Contracts	April, 1983
OSFA Goals and Objectives System Strategies for Improved Program Planning and Management	September, 1983
Office of Student Financial Aid Quality Improvement Program: Design and Implementation	September, 1983

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EXECUTIVE SUMMARY

During the past two years, the Office of Student Financial Assistance has been engaged in an effort to develop an internal quality improvement program. The purpose of the program is to develop a systematic approach to identifying, measuring, and correcting errors or tendencies toward errors in the student aid delivery system. The design for this program includes both a measurement component and a corrective action component. This report describes the purpose and direction of the OSFA quality improvement program. The report has four chapters.

Chapter 1 provides background on the quality improvement program. Some of the basic points covered include:

- A review of the literature suggests quality control and corrective action can be most effective when targeted at the most error-prone areas;
- The overall OSFA quality improvement program has QC measurement and corrective action components, both designed to target technical assistance at high error-prone areas.

Chapter 2 reviews the general approach to quality improvement developed during the Stage II Pell Grant Quality Control study. This approach consists of the following key elements:

- An overall strategic approach that enables OSFA to target technical assistance on high error-prone areas, while proceeding with an overall design strategy;
- An emphasis on both manual and automated quality control measurement, enhancing existing data bases and procedures to the extent possible;
- An emphasis during the first year of the quality improvement program on the development of the measurement component of the program.

Chapter 3 presents the overall design for the OSFA quality improvement program. First, the opportunities for quality improvement in the current delivery system are reviewed. Marginal improvements to critical activities in the current system can alleviate some of the most seriously negative effects of the current system, including deficiencies in fund control and availability of program information.

Second, an overall strategy for the OSFA quality improvement program is presented. OSFA is undertaking a quality improvement program that concentrates on:

- **Institutional Quality Control,** which is encouraged by Federal regulations and facilitated by institutional quality control guidelines;
- **External Quality Control,** which can provide OSFA with an ongoing measurement of overall error rates for all programs;
- **Internal OSFA Quality Control,** which includes a supplemental effort to identify error prone activities, develop measurement mechanisms for these activities, and identify corrective action options;
- **A Quality Control Management Information Systems (QCMIS),** that will provide an overall QC reporting and information system.

Third, the critical targets for internal quality improvement are identified and measures are proposed. The critical activities, some of which were addressed during Stage II of the Pell QC Study, provide OSFA with a road map for future internal quality improvement.

Fourth, the next steps in the OSFA quality improvement process are considered. These include:

- Selection of new targets for technical assistance from the list of initial activities;
- Development of a systematic approach to quality improvement for critical activities, which is addressed in the final chapter;
- Development of the QCMIS framework which would provide OSFA with a well-defined QC information and reporting system.

Chapter 4 presents an implementation plan for the OSFA quality improvement program. This chapter includes:

- An overview of the entire OSFA quality improvement program, with a special emphasis on the role of the corrective action component;
- An implementation plan for the program;
- A strategy for implementing the corrective action component using the critical activities identified in Chapter 3;
- Priorities for ongoing quality improvement.

CHAPTER I
BACKGROUND

This report presents the results of the Quality Control (QC) System Design Task, Stage Two of the Pell Grant Quality Control Study. This task was initiated in an attempt to design a QC system for the Pell Grant Program. Based on the preliminary design of the Pell QC system and a comparison of the major student aid programs, the scope of the task was broadened to include the Guaranteed Student Loan (GSL) and the Campus-Based (CB) programs, and to provide technical assistance in qualitative improvements in the delivery of these major student aid programs operated by the Office of Student Financial Assistance (OSFA). This refined approach was based on the understanding that there were many basic similarities in the delivery systems for these programs and that quality improvement was the responsibility of functional units within OSFA. The quality improvement program discussed in this paper can provide OSFA with a systematic process for identifying and correcting error-prone points in the delivery system. A major outcome of this design and technical assistance activity is a plan for an ongoing quality improvement program described in this final report. This chapter reviews the background and context for the design study and discusses the meaning of quality control.

THE PELL GRANT QUALITY CONTROL STUDY

Quality, while often considered ill-defined in many organizations, does not just happen. It can be realized only through management programs that better utilize personnel and systems to improve product development and delivery. In a large social program, such as the Pell Grant Program and other student aid programs, millions of people are directly affected by the quality of the delivery system. The ultimate test of quality for a social program is whether the beneficiaries of the program receive the correct amount of aid, on time, and with a minimum of error.

Additionally from the perspective of the Federal government, it is important that aid be delivered in as effective and efficient a manner as humanly, or technically, possible. These factors--quality of the product and delivery system--are of concern to postsecondary institutions, state agencies, and to the Federal government.

The Pell Grant Quality Control Study was designed to provide OSFA with a comprehensive examination of the status of the current delivery system and to incorporate basic quality improvement principles. The quality control literature review discussed below provides three fundamental principles for quality improvement--prevention, identification, and elimination (PIE). These are generally characterized as follows:

- **Prevention** refers to the design component of any production or delivery system. Prevention of error must be considered when a delivery process is designed originally, or in subsequent redesign;
- **Identification** of error becomes important once a production or delivery system has been implemented. Typically, this would involve a statistical sample of products (awardees in the case of student aid) and the establishment of measures and standards of routine error measurement;
- **Elimination** refers to the process of correcting error in a production or delivery system once it has been implemented. This process is usually referred to as **corrective action.**

The three-stage Pell Grant Quality Control Study, illustrated in Figure 1-1, was a comprehensive quality improvement project. Stage One was a study of the quality of the current delivery system for Pell. Stage Two of the project was divided into three parts: Part I was targeted at designing and implementing an ongoing measurement system for quality control in OSFA, Part II was an assessment of the effects of the current and alternative delivery system design (currently underway), and Part III was an analysis of Stage One data. Stage Three, currently underway, provides a restudy of quality in the delivery system.

The three components of Stage Two closely parallel the PIE concept. Part II, Delivery System Assessment, focused on **prevention** by addressing basic long-range design problems with the student aid delivery system. Part III, Follow-on Analysis, is focused on continued and refined **identification** of errors in the delivery system. Part I, the QC System Design Component, focused on the **elimination** of error in the current delivery system through the implementation of an ongoing quality improvement program.

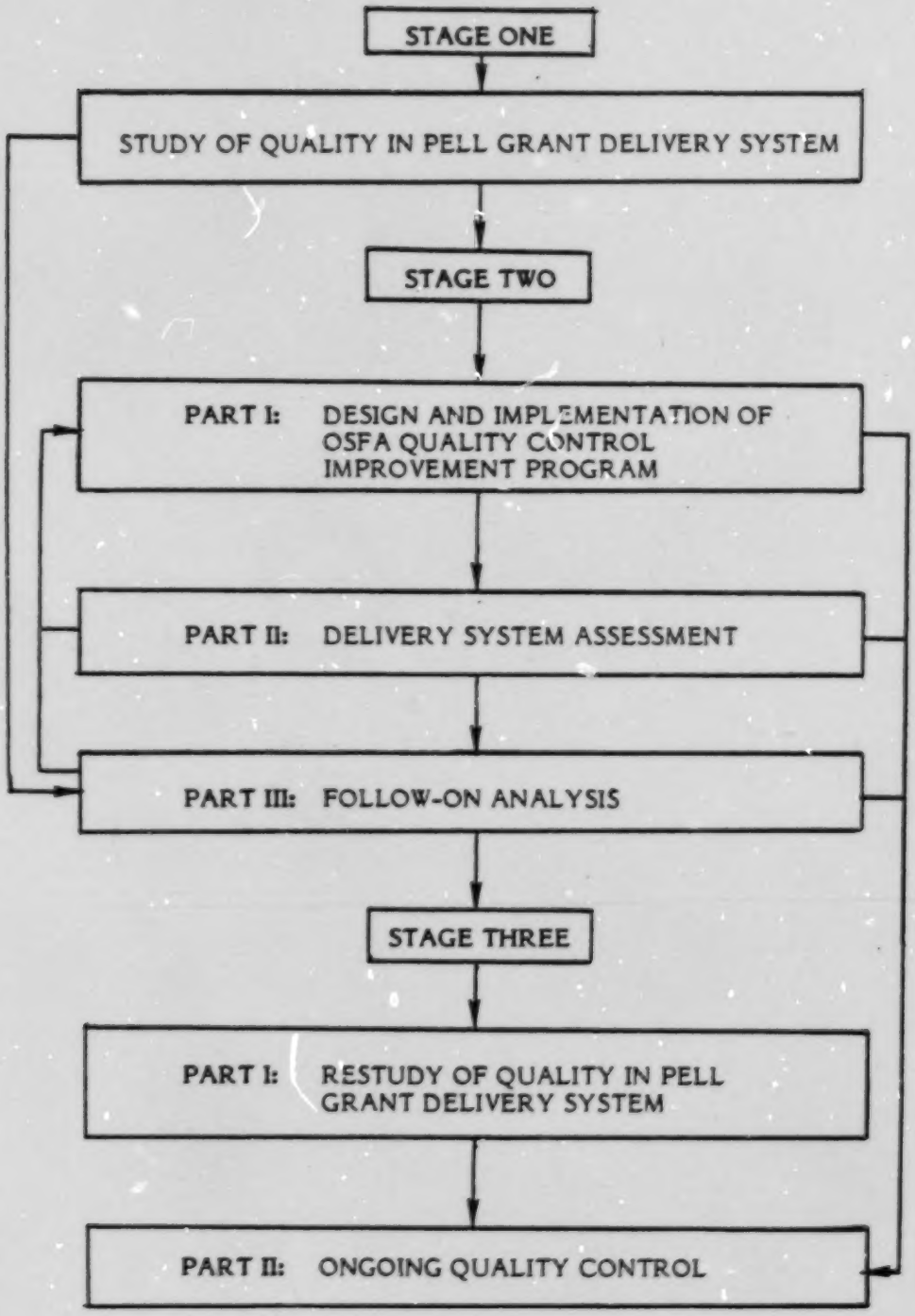
STAGE ONE
STUDY OF QUALITY IN PELL GRANT DELIVERY SYSTEM
STAGE TWO
PART I: DESIGN AND IMPLEMENTATION OF OSFA QUALITY CONTROL IMPROVEMENT PROGRAM
PART II: DELIVERY SYSTEM ASSESSMENT
PART III: FOLLOW-ON ANALYSIS
STAGE THREE
PART I: RESTUDY OF QUALITY IN PELL GRANT DELIVERY SYSTEM
PART II: ONGOING QUALITY CONTROL

FIGURE 1-1

PELL GRANT QUALITY CONTROL STUDY

This is the final report for Stage Two, Part I of the Pell Grant Quality Control Study. As the figure illustrates, it draws from parts of Stage One and other parts of Stage Two, and provides a framework for continuing the OSFA quality improvement program.

The findings of Stage One had an important impact on shaping Stage Two of the study. Stage One indicated substantial dollar error in awards to students during the 1980-81 academic year. Dollar error was defined as the actual award disbursements as listed in records at the sampled undergraduate institutions in Spring, 1981, minus what Advanced Technology calculated the correct disbursement to be using the best available information on application data, cost of attendance, and enrollment status. Total dollar error for FY 1981 was estimated to be $275 per recipient, or $650 million of the $2.2 billion (a 30 percent error rate) awarded to the 2.36 million recipients represented by the sample. An estimated 71 percent of the recipients received an incorrect award, although in some cases the amount of incorrect award was quite small. Approximately 44 percent of recipients had award errors in excess of $150. Net error (overawards minus underawards) was $402 million. Fifty percent of program recipients (or approximately 1.2 million students) received overawards totaling $526 million. Another 21 percent of recipients (approximately .5 million students) received underawards totaling $124 million.

Stage Two moved beyond these basic research findings and was broader than Stage One in two important ways. First, the scope of work actually included providing technical assistance to operating units in OSFA. The technical assistance was provided, on a priority basis, to operating units responsible for quality improvement activities. This was a logical extension of the initial design since the identification of areas in need of technical assistance was based upon an evaluation of the delivery system performed during Stage One of the study. The technical assistance activity actually took the form of assessing needs for corrective action and making recommendations for specific corrective actions.

Second, Stage Two, especially Parts I and II, included other Title IV student assistance programs, particularly the Campus-Based Programs--the Supplemental Educational Opportunity Grant (SEOG), National Direct Student Loan (NDSL), College Work-Study Program (CW-S)--and the Guaranteed Student Loan Program (GSLP). The GSLP includes both Guaranteed Student Loans (GSLs) and Federally Insured Student Loans (FISLs).

THE MEANING OF QUALITY CONTROL

American government and industry have recently rediscovered the meaning of quality improvement and quality control. During the past decade, as problems emerged in the U.S. economy, government and industrial leaders began to ask basic questions about the quality of production in the industrial sector and the quality of service delivery in government.

In the early 1970s, the Federal government faced the monumental task of going into production with a massive entitlement program, the Basic Educational Opportunity Grant Program, within a one year time-frame. This task was accomplished successfully. Each subsequent year, the program grew in size and changed in some basic programmatic way; consequently, the actual delivery of grants remained the critical issue. There was little time to concentrate on the quality of the system used for delivery. The other student aid programs have faced similar problems with the need to deliver a program that is continually being changed in the legislative process. For example, the GSL program has undergone major programmatic changes through reauthorizations and technical amendments of the Higher Education Act that have resulted in nearly constant modifications of the GSL delivery system during the past 12 years. Consequently, there is need for a systematic quality improvement program for the major student aid programs.

The QC literature provides a framework for a systematic quality improvement program. Juran and Gryna,[1] two leaders in the QC field, define quality as **fitness for use.** Accordingly, QC should include activities which assure that products or services are fit. Juran and Gryna emphasize that quality activities encompass the life of a product, from design to post-sale, although they recognize that often only a limited range of these activities can be provided at any one time. For student aid programs, this perspective suggests that quality control should encompass the entire delivery process, from the application planning for student aid programs, to reconciling accounts after the aid is delivered. An important distinction can be made between **sporadic defects** and **chronic problems.** Ideally, the QC process should involve a breakthrough process to eliminate chronic problems, while sporadic errors can usually be eliminated through **preventive** QC. Figure 1-2 illustrates the differences in the two approaches to QC.

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[1]Juran, J.M. and Gryna, F.M., Quality Planning and Analysis, New York: McGraw-Hill, 1970.

QC WITH EMPHASIS ON CONTROL	QC WITH EMPHASIS ON BREAKTHROUGH
1. Choosing the control subject--defining the quality, characteristic, or effort that must be regulated	1. Breakthrough in attitudes--convincing those responsible that a change in quality level is desirable and feasible
2. Choosing a unit of measure--defining the terms in which the control subject will be measured	2. Discovery of the vital few problems--determining which quality problem areas are most important
3. Choosing a standard--defining the desired level of performance for the control subject	3. Organizing for breakthrough in knowledge--defining the organizational mechanisms for obtaining the knowledge for achieving a breakthrough
4. Designing a sensor--creating a method of measuring the control subject	4. Creation of the steering arm--defining and staffing a mechanism for directing the investigation
5. Measuring performance--performing the actual measurement	5. Creation of the diagnostic arm--defining and staffing a mechanism for executing the technical investigation
6. Interpreting results--comparing the actual measurement to the standard	6. Diagnosis--collecting and analyzing the facts required and recommending the action needed
7. Decision making--deciding on the action, if any, to be taken to the standard	7. Breakthrough in a cultural pattern--determining the effect of proposed changes on the people involved and finding ways to overcome the resistance to change
8. Action--taking the specific steps to bring performance up to the standard	8. Breakthrough in performance--obtaining agreement to take action
	9. Transition to the new level--implementing change

Source: Juran, J.M. and Gryna, F.M., Quality Planning and Analysis, New York: McGraw-Hill, 1970.

FIGURE 1-2

BREAKTHROUGH vs. CONTROL

Historically, QC in the United States has emphasized technical approaches such as statistical QC, reliability, and product assurance. Increasingly, however, it is important for organizations to establish quality policy, with specific quality objectives that should be conveyed in written form. In his most recent work, Juran[2] argues that two types of QC are necessary, managerial and technical. In building a management commitment to QC, a successful QC analysis must consider the existing organizational responsibilities and the new design should be built around them. Additionally, a top management commitment to quality improvement is necessary to maintain an ongoing quality improvement program.

A variety of well-established tools and techniques are available for QC. The American Society for Quality Control maintains a publications program that covers such topics as national standards[3] and guidelines for managing vendors.[4] There are well-established guidelines for quality audits and quality cost analysis,[5] and well-defined plans for establishing quality improvement programs.[6]

One especially useful analytic technique in quality analysis is the Pareto principle which states that losses are never uniformly distributed over causes (quality or characteristics). Instead, losses are always unevenly distributed so that a small percentage, or a vital few of the causes, contribute a higher percentage of the loss of error. This principle can be used to analyze the distribution of loss due to error. The results of this approach are often a boon to managers and others concerned with instituting QC; it can facilitate an economical, targeted attack on the bulk of quality losses. Juran and Gryna (1970) argue that this simple truth, the Pareto principle, makes a quality improvement program possible. Once the vital few problems have been identified they can be targeted for management of systematic processes, identification of high error-prone areas, then targeting of

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[2]Juran, J.M., Course on Management of Quality, New York: J.M. Juran, 1981.

[3]American Society for Quality Control, American National Standard: Definitions, Formulas, and Tables for Control Charts, Milwaukee, Wisconsin: ASQC, 1978.

[4]American Society for Quality Control, Guide for Managing Vendor Quality Costs, Milwaukee, Wisconsin: ASQC, 1980.

[5]Bajaria, Hans J. (Ed.), Quality Assurance: Methods, Motivations and Management, Dearborn, Michigan: Society of Manufacturing Engineers, 1981.

[6]Kidwell, J.L., A Profit Plan for Quality, Waterford, Connecticut: John L. Kidwell Co., 1975.

technical assistance. These areas can be the basis of a systematic quality improvement program.[7]

These concepts are useful for student aid programs; however, the literature on QC is dominated by the private sector, especially industrial production. Most government standards have been generated by and for defense contractors. Consequently, the decision to institute the quality improvement programs for OSFA has been a one-of-a-kind effort: it has applied basic principles developed in the QC field to the specific and unique problems of student aid delivery.

THE OSFA QUALITY IMPROVEMENT PROGRAM

The overall goal of this task is to establish a framework for improving the quality of OSFA programs. A significant way to raise program quality is to routinize the process of QC. QC, as used in this project, is the process of preventing, identifying, and eliminating sources of error in a delivery or production system. The concept is most comprehensible when used in an industrial setting. For example, it is easy to see the need for QC measures in the production of automobiles. If the quality of a particular make of automobile varied greatly from car to car, the result would be expensive corrective action costs to the manufacturer and decreased sales to consumers. Quality control is somewhat more ambiguous in a social service setting, such as the provision of student aid; however, it is no less important. The Pell Grant Program, one of the largest student aid programs, illustrates this point. The annual overpayments in the Pell program, due to various institutional, student, and processor errors, are estimated in excess of $400 million. This amount provides a great strain on program resources and, due to annual funding ceilings, may reduce the size of the average award at the same time that education costs continue to rise.

In both industrial and social service settings, QC measures can increase the efficiency and effectiveness of the delivery system by reducing costly errors and raising the quality of services or products. In order to integrate QC into the everyday operations of an organization, at a minimum:

- Output standards must be established;
- The established standards must incorporate technical specifications prescribed by the provider of the service or product and expected by the recipient or consumer;

[7] Kidwell, ibid.

- A system for monitoring standards and correcting errors must be made operational.

Among the possible operational procedures in a student aid specific QC program are the following:

- Develop standards and measures for monitoring the delivery of student aid;
- Measure performance of student aid delivery against specified measures;
- Determine and monitor errors in eligibility determination and award processing;
- Identify sources and probable causes of errors to plan corrective actions;
- Develop corrective action procedures as an integral part of the processing functions;
- Develop standards and measures for monitoring the results of corrective actions;
- Ensure that various actors (e.g., processors or institutions) are operating in accordance with specified procedures, regulations, and standards;
- Report appropriate QC information to Department of Education personnel on a timely basis.

In order to improve the quality of OSFA programs, two distinct procedures must be developed. First, an ongoing structure or framework to determine sources of program error and to measure it must be developed. This component of a quality improvement program may be called the **technical measurement component.** Second, a formal mechanism for designing and selecting procedures to eliminate existing error must be designed. This component of a quality improvement program is called the **corrective action component.**

When these two components of a quality improvement program are integrated, they become a process for maintaining QC. When viewed in the context of a quality control process, each component has a series of well-defined subcomponents or steps. The technical measurement component includes the following steps:

- Define the sampled subject for control;
- Define a unit of measure;
- Establish a standard of performance;
- Create a measuring device or procedure.

The steps in the corrective action component are:

- Mobilize for measurement;
- Compare actual performance with established standards;
- Make management decisions on type of corrective action needed;
- Implement corrective action.

An illustration of the interrelationships between these steps in a well-integrated QC process is shown in Figure 1-3. The QC process is illustrated as a cyclical procedure since the process is ongoing.

The QC cycle was used as a basis for the design of the OSFA quality improvement program. The emphasis of this task was on the design of a technical or measurement component for the Pell Grant Program. The overall design for the OSFA Quality Improvement Program includes both measurement and corrective action components.

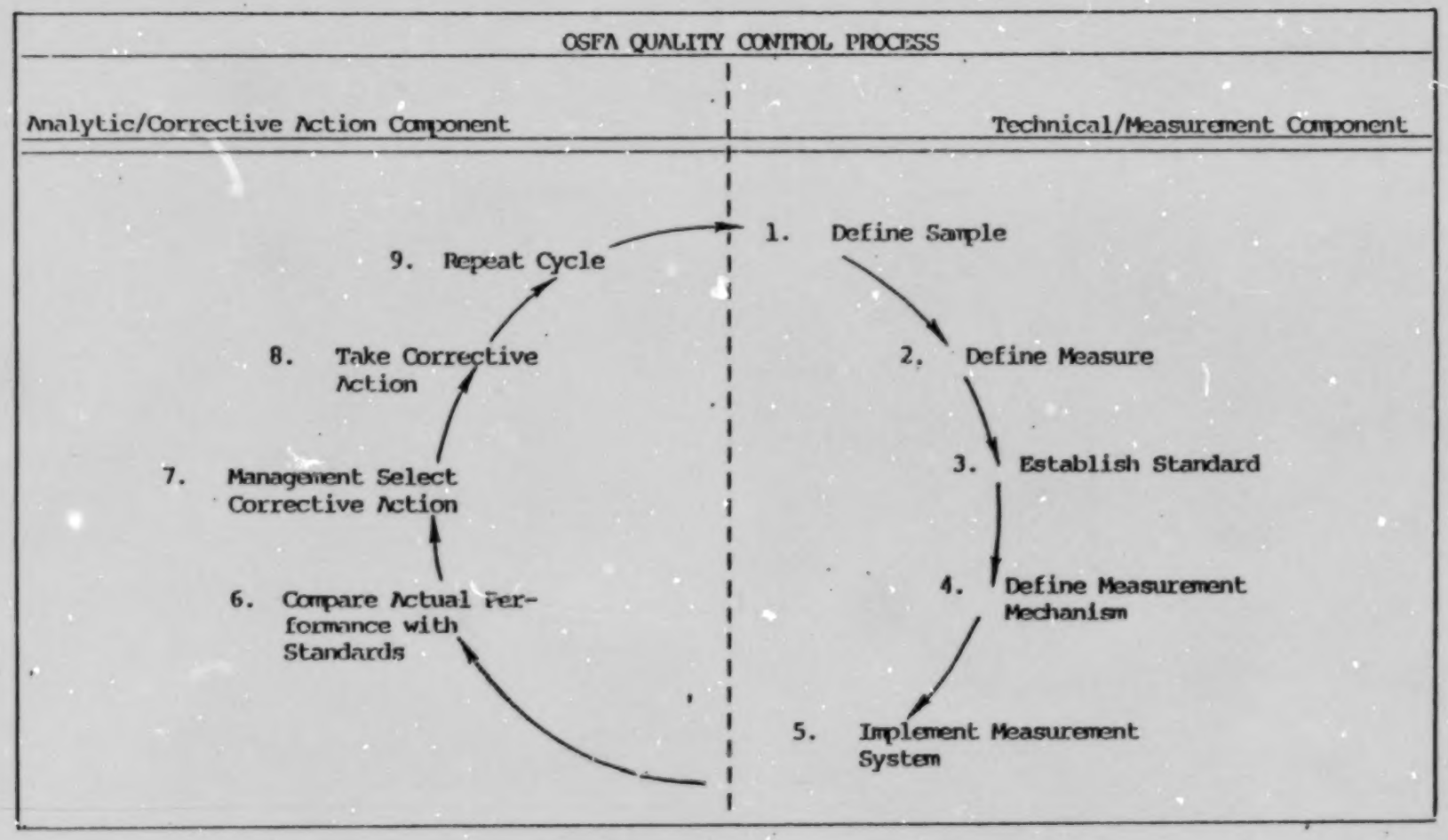

FIGURE 1-3

STEPS IN THE DEVELOPMENT OF AN OSFA QUALITY IMPROVEMENT PROGRAM

CHAPTER 2
GENERAL APPROACH

This chapter reviews the general approach used in the design of the Quality Improvement Program. This program provides OSFA with a systematic methodology for identifying, measuring, and correcting errors in the student aid delivery system. The chapter has three sections. The first, reviews generic approaches to quality improvement, including the strategic approach which was used for the task. Second, alternative QC system configurations for the measurement component of the OSFA QC system are reviewed. Finally, the actual framework used in the task is summarized. The general approach presented in this chapter is a tested methodology for improving quality in student aid programs.

GENERIC APPROACHES TO DEVELOPING QUALITY CONTROL PROCEDURES

The quality control process should not merely be an afterthought or an addendum to an existing system. Unfortunately, the provision of student aid does not represent this ideal situation. Although some concern has been paid to quality control procedures, no rigorous and methodical quality control process paralleled the development of the delivery system. Therefore, quality control procedures must subsequently be integrated into an operational delivery system. Three generic approaches have been identified for introducing quality control procedures into an existing delivery system. The first is characterized as the **incremental** bottom-up approach, the second as the **comprehensive** approach, and the third as the **strategic** or modular approach.

The **incremental** bottom-up approach to quality control development typifies the approach used in most government agencies, educational institutions, and industrial settings. This approach assumes that functional subunits within an organization have responsibility for their own corrective actions and as a result, no

system-wide quality control plan exists. Therefore, quality control development is usually sporadic, incremental, and seldom the outcome of coherent planning. Further, since corrective actions are identified by subunits, quality control problems involving interface with other subunits are rarely resolved. The typical steps followed by an organization taking an incremental approach to quality control are:

- Functional subunits (division, branch, etc.) discover error-prone areas through problems with the system in operation;
- Plans for corrective actions (new procedures or system changes) are developed and based on needs as they arise--usually a limited range of options are considered;
- Managers seek new resources for corrective actions--system development or implementation of new procedures--but problems that involve an interface with other subunits are often ignored unless the resource issues can be resolved;
- Quality control procedures are developed and implemented only as time and resources permit.

The incremental approach has dominated quality control development in student aid. While the Division of Quality Assurance (DQA) has implemented some quality control reporting requirements in the past, there have been no systematic attempts to develop quality control procedures. An incremental approach to quality control is likely to produce some serious problems. These include:

- Completion of specified tasks in the necessary time frame without concern for smooth operation and reduction of error in the system and efficient use of personnel and other resources;
- Inconsistency and variation in the ways functional subunits deal with quality control problems;
- Acute problems in the quality control of products that cut across functional subunits (or that involve more than one Division/Branch).

The comprehensive approach assumes that anything that can go wrong with the delivery system will go wrong; therefore, it is important to identify every possible error in the system and design corrective procedures. In order to introduce quality control procedures into the student aid delivery system according to this methodology, it would be necessary to identify all program subsystems and all the major

actors or components in each subsystem and then define a responsive series of corrective actions. Specifically, the basic steps in a comprehensive approach to quality control are:

- Identify the major subsystems of the programs (this includes pre-application, application, eligibility determination, benefit calculation, fund disbursement, and account reconciliation);
- Identify the major actors or components for each subsystem (for example, for the Pell eligibility subsystem, actors include students/parents, institutions, and application processors);
- For each actor in each subsystem, identify acceptance measures of possible errors in the system;
- Define measures for each set of standards including identification of data elements and procedures for information collection;
- Determine the components of each subsystem that merit development and inclusion in the quality control system and evaluate the feasibility of including the various information sources in a quality control data base;
- Proceed with system development on the select subsystems (design and develop procedures for implementation of selected components of each subsystem).

The strategic approach assumes that the major sources of error in student aid programs can be identified and corrective action should be made in these areas according to a step-wise or modular methodology. Thus, to utilize this approach, significant sources of error must first be identified, prioritized, and then corrected in a hierarchical manner. The basic steps in the strategic approach are:

- Conduct a functional analysis of the operating system, including information requirements, linkage structures, and breakdown points. In other words, identify the places in the system where corrective action can be taken and monitor progress;
- Identify significant sources of error in the program;
- Select and prioritize targets for systematic QC development and the time frame for specifications, design, development, and installation of each selected measurement systems;
- Proceed with systems development for selected measurement systems (e.g., develop procedures and systems manuals, user manuals, system specifications, and software specifications, as necessary);

- Perform system tests on selected measurement systems as they are completed.

Since the Stage One study identified major problem areas in the delivery of student aid, the project team and OSFA decided that an incremental approach to quality control was not adequate. Both the comprehensive and strategic approaches to quality control were viable strategies, however.

For the Pell Grant Program, the comprehensive approach would result in an elaborate quality control system that imposed new data collection procedures on top of the already existing system. It would permit the development of a separate or stand-alone Quality Control Management Information System (QCMIS). It could also be used to produce quality control manuals for training ED personnel (Central and Regional) and institutional representatives in quality control procedures. To the extent that the system used automated data collection and analysis procedures, it would be labor intensive since virtually an entire new set of procedures would be needed for each component of each subsystem. Also, sophisticated data base management procedures could be needed centrally, depending on how much of the system was actually implemented. The comprehensive approach was considered too ambitious for implementation. Trying to implement the system all at one time would put great stress on the entire delivery system.

The strategic approach to quality control development in the Pell program would permit the incremental implementation and testing of modular quality control subsystems designed specifically to reduce errors in the system. The modular approach could also permit the use of up-to-date electronic technology utilizing existing data sources, where appropriate, rather than developing entirely new data sources and reporting procedures. It might also result in more systematic analysis and reporting on data currently collected. Some new data collection would invariably be required, however. The strategic approach provides OSFA with a flexible approach to targeting resources on areas of greatest need. The risk associated with this approach is that some important area could be overlooked, and consequently, a major problem could go unattended.

After analyzing the two approaches the project team and DQA decided to use the strategic approach. The basic trade-off between the comprehensive and strategic approaches is comprehensiveness versus timeliness. Since there is an immediate need for quality control procedures in the student aid process and since funding is tight in all government programs, the project team recommended utilizing

the strategic approach to introduce quality control procedures. This approach has the greatest potential for:

- Reducing errors in the Pell program;
- Adding other student aid programs to the quality control process on an ongoing basis;
- Pilot testing quality control components earlier in the study;
- Developing a sound responsive methodology to corrective actions.

ALTERNATIVE QC SYSTEM CONFIGURATIONS IN OSFA

Two important design issues concerning the QC system or program are: (1) the degree to which the system will be automated; and (2) the degree to which existing reporting and information processing can be utilized. These issues were considered early in the design process as part of the conceptualization of the quality improvement program.

The issues of automation and report formats can be used to generate five feasible configuration options.

- Option 1: a QC system providing manual enhancements to the existing delivery system and requiring new reporting formats;
- Option 2: a combined manual/automated QC system requiring new reporting formats;
- Option 3: a combined manual/automated QC system using existing reporting formats;
- Option 4: a fully automated QC system using existing reporting formats;
- Option 5: a fully automated QC system requiring new reporting formats.

Existing data are not of sufficient quantity or quality to make providing manual enhancements to the existing system and using existing requirements a viable option. Each option can be compared using the following evaluation criteria:

- Feasibility of the system design (Can it be done?);

- Potential for reducing error (Will it save money?);
- Developmental costs (How much?);
- Interface with the delivery system (Will it work?).

Option 1: Manual Enhancements

It is possible to develop a quality control MIS that essentially provides manual enhancements to the existing Pell delivery system. This MIS will require development of detailed report formats for each of the major actors in the financial aid delivery system. The reports would be entered into a filing system in the Division of Quality Assurance and used as a means of monitoring and tracking progress on certain key quality control areas. Either the comprehensive or the strategic approach to quality control system development could be used to develop the manual enhancements, although the comprehensive approach is easier to adapt to this option. The major problems with this option are that it would add to the reporting burden and introduce excessive time delays in program monitoring due to its nonautomated format.

Option 2: Combined Manual/Automated MIS Requiring New Reporting Formats

This option would essentially take the approach in Option 1 and where appropriate, automate data files. Other files, including periodic summary reports using aggregated data, would remain manual. This option has the potential for providing data on a somewhat more timely basis than Option 1 but would provide an additional layer of reporting on top of the existing delivery system. It could use either the comprehensive or strategic system development approach but would be more adaptable to the former.

Option 3: Combined Manual/Automated MIS Using Existing Reporting Requirements

This option would have some of the same features as Option 2 but would emphasize new analyses of existing data sources rather than development of entirely new reporting formats. This approach would be flexible enough to add other student assistance programs as necessary. In this way, a series of QCMIS subsystems could be constructed that dealt with critical points in the delivery system. This option

would be most adaptable to the strategic approach for quality control system development.

Option 4: Fully Automated/Integrated MIS Using Existing Reporting Formats

This option would take the approach in Option 3 to the fullest possible degree of system automation. Such an option would integrate the core QCMIS with systems that interface with the major actors' operating systems. Monitoring, comparing results to specific standards, taking routine actions, and reporting could be built into the system. Such an approach would be dependent on automation of most components of the student aid delivery system. This option could use a variation of either the strategic or the comprehensive approach to systems development but would have to be done in combination with the redesign of the entire delivery system.

Option 5: Fully Automated MIS Requiring New Reporting Formats

Option 5 is identical to Option 4 except existing data would not be considered sufficient to create a functional MIS. Thus, additional reporting burden would be added for actors in the delivery system.

Assessment

Figure 2-1 summarizes the preliminary assessment of the five generalized options against the evaluation criteria. On the basis of the preliminary assessment, it is possible to make an initial judgment about which QCMIS configuration option is most desirable.

Option 1 would probably have relatively modest results on reducing error, moderate developmental costs, and would not create an integrated QCMIS delivery system. Option 2 would increase the potential for reducing error but would raise developmental costs. Option 3 has high potential for reducing error, would require moderate developmental costs compared to Options 2, 4, and 5, and would be partially integrated into the delivery system. Options 4 and 5, while having the highest potential for reducing error, do not appear feasible at the present time. Of the five options, Option 3, a combined automated/manual system using existing data

	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5
Description	Manual QC System with New Data Sources.	Combined Automated/ Manual QC System with New Data Sources.	Combined Automated/ Manual QC System with New Data Sources.	Fully Automated, with Existing Data Sources.	Fully Automated, Integrated QC System.
Feasibility	Moderate. (Can be implemented with existing delivery system--manual analysis may take too long to be useful.)	High. (Can be implemented with existing delivery system.)	High. (Can be implemented with existing delivery system.)	Low. (Requires major changes in delivery system.)	Low. (Requires delivery system redesign.)
Potential for Reducing Error	Low. (Delays built into reporting limit monitoring front-end corrective action. Implementation may not lead to error reduction.)	Moderate. (Delays built into reporting limit monitoring front-end corrective action.)	High. (Integrated approach permits monimonitoring front-end corrective action.)	High. (Integrated approach permits monimonitoring front-end corrective action.)	High. (Integrated approach permits monitoring front-end corrective action.)
Developmental Costs	Moderate. (Requires developing entirely new system.)	High. (Requires developing entirely new system.)	Moderate. (Uses existing data to the extent possible.)	High. (Requires automating new data sources.)	Unknown. (Included in delivery system redesign which would be costly.)
Interface with Delivery System	Not Integrated. (Result is creation of new, parallel system.)	Not Integrated. (Result is creation of new, parallel system.)	Partially Integrated. (Result is integration of QC subsystems with Pell delivery system.)	Partially Integrated. (Result is integration of QC subsystems with Pell delivery system.)	Fully Integrated. (Result is full integration of QC into Pell delivery system.)

2-8

FIGURE 2-1

PRELIMINARY ASSESSMENT OF QC SYSTEM OPTIONS

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sources, appears to be the most desirable and viable QC system configuration. It would create a QC system that is resource saving, using the enhancing existing data and management practices, rather than resource draining, placing new demands on the current delivery system.

FRAMEWORK FOR DEVELOPING QUALITY CONTROL PROCEDURES

Based on this analysis, a strategic or modular approach to the development of quality control procedures for the OSFA student aid programs was utilized. It adapted the various steps in the strategic approach to quality control development. These steps can be broken down into two phases--design and implementation. The basic steps in the design phase were:

- Identify significant sources of error in the program (completed during Stage One);
- Conduct a functional analysis of the operating system, including information requirements, linkage structures, and breakdown points. In other words, identify the places in the system where corrective action can be taken and monitor progress;
- Conceptualize a quality control system with modular components designed to detect and monitor error-prone functions.

The steps in the implementation phase were:

- Select and prioritize modular subsystems for development. Also, identify time frame for specifications, design, development, and installation of each selected subsystem;
- Proceed with systems development for selected subsystems (e.g., develop procedures and systems manuals, user manuals, system specifications, and software specifications, as necessary);
- Perform system tests on modular subsystems as they are completed.

During the design phase, the focus was on a QC measurement system for the Pell Grant Program. As a result of a functional analysis and a comparison of Title IV Programs, suggesting many similarities between programs, all three major programs were included in the basic design. As a result, the preliminary design was expanded based on a comparative analysis of the Title IV programs to provide a basic framework for the overall OSFA Quality Improvement Program.

The implementation phase was characterized by technical assistance rather than detailed system design per se. This was undertaken in recognition that OSFA divisions must be responsible for quality improvement in their own areas of responsibility. The technical assistance was targeted on error-prone areas that needed QC enhancements and were designed to provide an ongoing management report.

CHAPTER 3
DESIGN FOR THE OSFA QUALITY IMPROVEMENT PROGRAM

During the past three years, OSFA has initiated an internal quality improvement program. This program has used the strategic approach to quality improvement to identify and correct error-prone activities in the current delivery system. This effort has focused on:

- Identification of opportunities for quality improvement in the overall delivery system;
- Development of an overall strategy for improving the quality of the current delivery system;
- Implementation of internal mechanisms for improving student aid delivery.

This chapter describes the results of this effort and presents the long range plan for improving quality in the student aid delivery system, using the general approach discussed in Chapter 2. The chapter has four sections. First, the opportunities for quality improvement are discussed. Second, the overall strategy for quality improvement is reviewed. Next, the framework for the internal quality improvement program is reviewed. Finally, the steps in implementation of the overall strategy are discussed.

OPPORTUNITIES FOR QUALITY IMPROVEMENT

The development of the overall quality improvement strategy in OSFA was based on a detailed analysis of specific opportunities for quality improvement. A three-level framework was used to assess quality control needs of OSFA. Figure 3-1 presents an information system's perspective of OSFA based on this framework.[1] The three levels are:

- The policy-level analysis examines the type of quality control information required by entities that interact with OSFA in setting policy for student aid. These actors include the remainder of the Department of Education

[1]Adapted from R.N. Anthony. Planning and Control Systems: A Framework for Analysis, (Boston, MA: Harvard Business School, 1965). See also S.C. Blumenthal. Management Information Systems (Englewood Cliffs, NJ.: Prentice Hall, 1969).

DECISION-MAKING HIERARCHY	ORGANIZATIONAL LEVEL INVOLVED	DECISION OBJECTIVES	DECISION PROCESS INPUTS	INFORMATION SOURCES	DECISION PROCESS OUTPUTS
Strategic Level	President, deans, Congress, ED, OPDE, Deputy Assistant Secretary for Student Aid	• Set objectives. • Determine resources to be applied.	• Staff studies • External situation • Reports on internal achievements	• Special "one-time" reports • Simulations • Inquiries (Unrestricted)	Goals Policies Constraints
Management Level	Deputy Assistant Secretary OSFA Division Chiefs OSFA Branch Chiefs OSFA Section Chiefs	• Allocate assigned resources to task. • Make rules. • Measure performance. • Exert control.	Summaries Exceptions	• Many regular reports • Format variety • Inquiries (Restricted) • Data-Bank oriented	Decisions "Personal" Leadership Procedures
Delivery Level	OSFA Division Chiefs OSFA Branch Chiefs OSFA Section Chiefs OSFA Unit Chiefs OSFA Personnel Pell Grant Processor Institutions	Use resources to carry out task in conformance with rules.	Internal events	• Formal • Fixed procedures • Complex • Concrete	Actions

SOURCE: Adapted from Sherman C. Blumenthal, Management Information Systems (Englewood Cliffs, N.J.: Prentice-Hall, 1969), page 29.

FIGURE 3-1

A SYSTEMS PERSPECTIVE OF THE OSFA HIERARCHY

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(ED), the Office of Management and Budget (OMB), and Congressional staff. Interactions between OSFA and these entities usually occur as part of the annual budget process or legislative reauthorization.

- The management-level analysis reviews the organization of OSFA and its current management procedures related to quality control. The analysis includes an evaluation of the types of quality control information procedures required for the effective management of the Pell program.

- The delivery-level analysis considers the functional role of each organizational entity within OSFA. Examined are the quality control procedures currently in place in each entity, the information resources within the entity, and the information needs of the entity.

At the policy level, quality control concerns relate primarily to overall program delivery. Outside of OSFA, in ED and OMB, there is a concern that payment error in the Pell program, for example, should be assessed on an annual basis. Additionally, analysts in the Office of Planning, Budget, and Evaluation (OPBE) are interested in receiving timely analysis of policy options for corrective actions that require legislative or budget action. These same concerns are apparent within OSFA, along with an accurate awareness that critical parts of the policy cycle (planning, budgeting, and regulation) and program delivery process (application through reconciliation) must be performed on a timely basis.

At the management level, quality control has been hindered by the lack of information on the quality of system performance. The functional organization within OSFA makes programmatic improvement more difficult, especially when activities in one Division require information and actions from other Divisions. The lack of information about error-prone points can limit the ability of managers to track critical activities and make improvements. The timely flow of information between functional units is often limited, in part due to the quality of the overall information system. Too often the information needed by another Division, regardless of its importance, takes second priority to performance of key activities within the Division. As a result, there is a need for an overall strategy that identifes critical error-prone points in the delivery system and provides a framework for implementing corrective actions, especially as they relate to the flow of management information within OSFA.

At the delivery level, existing quality control procedures are more abdundant. Occasionally, Branches and Divisions have developed their own quality control processes, usually on an ad hoc basis. As a result, there is wide variation in the awareness of staff within OSFA about quality control issues. Some Branches have

developed fairly sophisticated approaches to quality control while others are still plagued by basic problems. Unfortunately, none of these procedures are tied together in an overall system with a well defined flow of information.

As part of this project, OSFA sponsored an exhaustive study of the effects of the current delivery system for the Pell, GSL, and Campus-Based programs.[2] It revealed that the most seriously negative effects of the current system for the Federal government are the unavailability of information and lack of fund control.[3] Most of the causes of these negative effects can be improved through marginal changes to the current system. For example, most of the basic problems with fund control for student aid programs can be corrected by improvements to internal accounting procedures. For example, in the GSL program, where fund control is the most severe problem, changes in accounting procedures can ameliorate many of the deficiencies identified by the General Accounting Office.[4] Other marginal changes for GSL, such as increased use of state quarterly reports in quality control checks for state claims and collections activities, could also reduce fund control problems.

Quality control measurement can play an important role in the overall strategy for delivery system improvement. Using the strategic approach to QC system development, it is possible to put quality control checks into place for critical activities throughout the student aid delivery system. Such development provides senior policymakers with the early warnings that they need about major system problems, as well as provides program managers with the detailed information they require to develop strategies for correcting delivery system deficiencies. For example, during the past year the GSL Branch of the Division of Program Operations put into place a new system for measuring error in the manual interest payment process. This enabled OSFA to find errors before they were uncovered by end-of-year audits and, in turn, to make needed corrections.

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[2]Advanced Technology, Inc., and Westat, Inc. Assessment of Alternative Student Aid Delivery Systems: Assessment of the Current System, prepared for the Credit Management Board, ED, and the Division of Quality Assurance, OSFA, June 1983, pg. 3-13.

[3]Ibid, pg. 3-14.

[4]The Guaranteed Student Loan Information System Needs a Thorough Redesign, U.S. General Accounting Office, September 24, 1983.

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The importance of improving the quality of information about the financial management of Federal student aid programs is echoed in the findings of the President's Private Sector Survey on Control: Task Force Report on Education.[5] The task force identified the need for improved management information systems and internal controls as a mechanism for reducing waste, fraud, abuse, and error.[6] The report considered the need for specific improvements in student aid programs and delivery, including improved debt collection. However, a major emphasis of the report was on the improvement of management information and fund accountability, two closely related problems.

Short of an overall delivery system redesign, which takes substantial resources and several years to implement, improved quality control holds the most promise for addressing these basic problems. Marginal improvements can resolve many of the basic problems with the student aid delivery system. Quality improvement efforts should be specifically targeted on improvements in fund control and availability of program information since these areas represent some of the most basic problems facing the Department.

THE OVERALL STRATEGY

OSFA has developed an overall strategy for quality improvement that can be implemented on an incremental basis and that targets resources on the most critical problems. The overall design of the quality control program is illustrated in Figure 3-2. The overall strategy has four major components:

- Institutional Quality Control, which encourages institutions to make delivery system improvements;
- External Quality Control, which provides quality assurance functions for institutional QC and provides overall measures of error;
- Internal Quality Control, which is designed to facilitate marginal improvements to the current system;
- A Quality Control Management Information System (QCMIS) that uses inputs from the above cited sources to tailor reports for:

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[5] Submitted to the Subcommittee for Consideration at the meeting on June 13, 1983.

[6] Ibid, pg. vii.

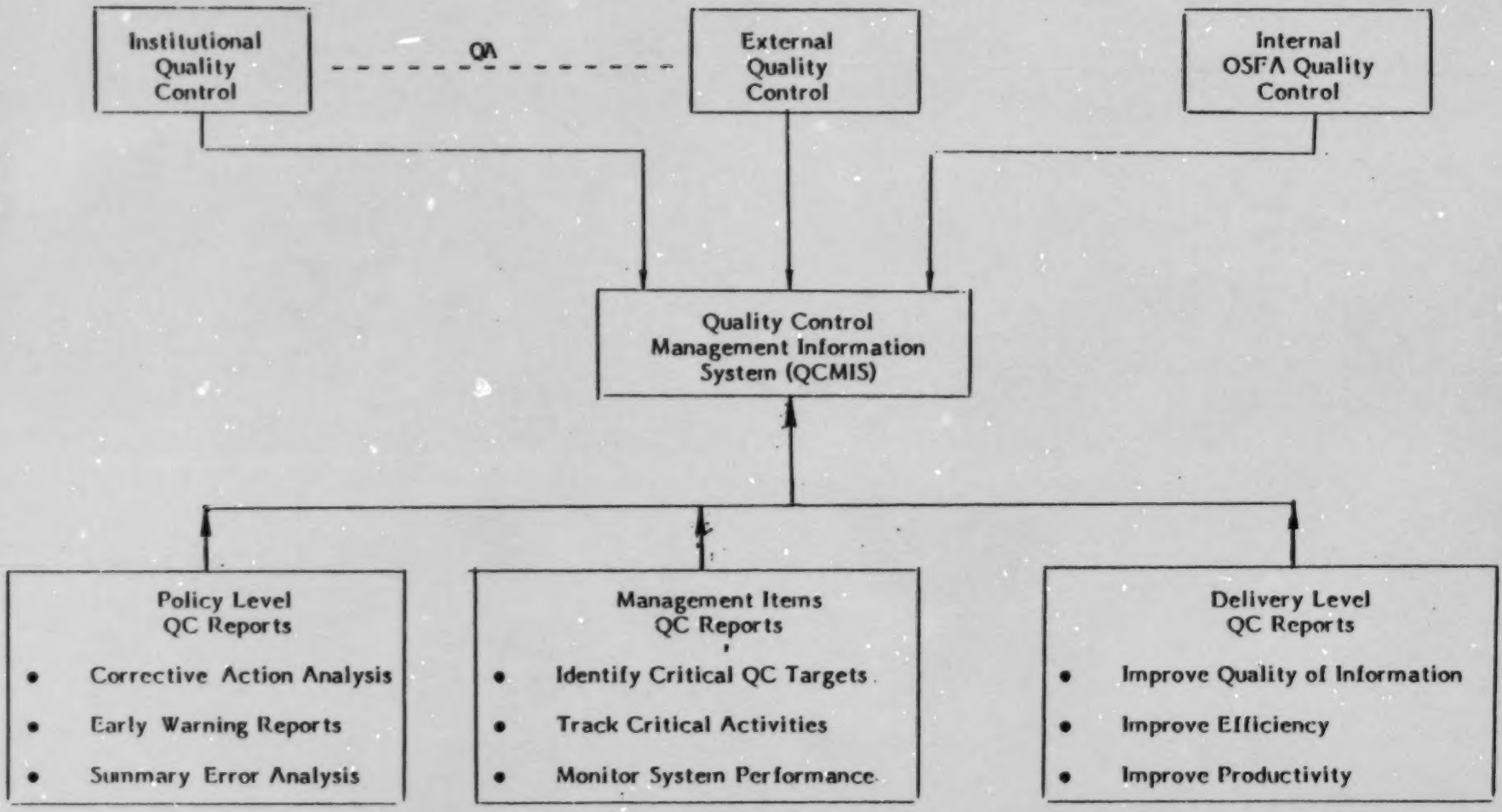

FIGURE 3-2

DESIGN FOR OSFA QUALITY CONTROL SYSTEM

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- Policymakers requiring corrective action analysis, early warnings of system problems, and summary error reports
- Managers concerned about identifying specific QC targets, tracking critical activities, and monitoring overall system performance
- Program personnel requiring basic routine information to improve the delivery process and financial accountability.

Each of these components of the overall design for the OSFA quality control program is discussed briefly below. The internal component is discussed in more detail in the next section.

Institutional Quality Control

It is the goal of OSFA to encourage the development of systematic internal quality control, through measurement of discrepancies and errors in the delivery system, in all postsecondary institutions participating in OSFA student aid programs. OSFA is taking two actions to facilitate this type of development.

First, OSFA is considering regulatory changes that would require postsecondary institutions to sample Campus-Based recipient records to measure error. The objective of this requirement would be to encourage institutions to measure errors in their own delivery system and to develop corrective actions if they have high error rates. Over the long term, OSFA will require institutions to measure and correct discrepancy of errors for all Title IV programs, not just for Campus-Based.

Second, through the "target of opportunity" approach initiated during Phase II of this project, Advanced Technology developed a handbook outlining quality control procedures for the financial aid office. A draft of this document was reviewed by members of the student aid community. Currently, the handbook is being revised to reflect OSFA and community concerns about long-term quality improvement at the institution level. This emphasis would place responsibility for quality control with the institution.

External Quality Control

Until institutions can implement a comprehensive institutional quality control plan, it is necessary for OSFA to develop and maintain a systematic process for measuring error in the entire delivery system. This is called external quality

control. The external component of the OSFA Quality Improvement Program focuses on the three major program areas: Pell, GSL, and Campus-Based. The Pell Quality Control Study, conducted by Advanced Technology and Westat, Inc., was a comprehensive study of error in the Pell program. A systematic framework for replicating the Pell Study was developed, and currently is being implemented. The Campus-Based segment of external quality control can be implemented either independently or in combination with the Pell Quality Control studies.

The measurement of error in the delivery of the GSL program presents special problems that could not be handled through modification of the Pell Quality Control studies. Since GSL involves a complex network of lenders and guarantee agencies as well as institutions, applicants, and applicant families, it will be necessary to take a different emphasis for this study. It would, at a minimum, include:

- Measurement of applicant error through a method similar to the Pell study;
- Measurement of institutional error through methods similar to the Pell study;
- Measurement of guarantee agency and lender error through an entirely new approach.

The goal of OSFA is to reduce its role in direct external measurement once an institutional quality control plan is operational. At that time, OSFA's role will become one of quality assurance. Quality assurance for external measurement is the process of monitoring the effectiveness of institutional quality control programs and determining institutional compliance with ED quality control regulations.

Internal Quality Control

The long range goal of the internal quality control program for OSFA is to develop QC measurement and reporting mechanisms for critical activities throughout the student aid delivery system. During Stage II, Part I of the Pell QC Study, the following activities were selected for technical assistance using the strategic framework:

- OSFA Goals and Objectives System
- GSL Manual Interest Billing

- FISAP Processes for Campus-Based Programs
- External Quality Control System
- Vendor/Processor Quality Control
- Institutional QC Guidelines.

Subsequently, additional targets have been added. One such target initiated during Phase III deals with the GSL reinsurance process.

Quality Control Management Information System

The major feature of the entire QC system is a quality control management information system (QCMIS) that receives inputs from all of the above quality control subsystems and can be used to generate reports for all levels of management. Conceptually, the QCMIS will include a framework for routine reporting from all other measurement subsystems, internal and external, as well as special analyses commissioned by the Assistant Secretary as part of the corrective action framework, which is discussed in the next chapter. Most of these reports can be generated by the other modules. The QCMIS should consist of a defined set of information flow and reporting specifications for each of the modules.

The framework for the routine reporting from other measurement modules to the QCMIS is presented in Appendix A. This framework includes:

- Summary reports from the external measurement module;
- Summary reports from the vendor/processor quality control and goals and objectives modules;
- Sample report formats for the internal QC module.

The quality control management information system, when fully developed, will provide management reports for managers throughout OSFA. It is the objective of the Division of Quality Assurance to continue with the development of the QCMIS framework, as outlined in Appendix A.

INTERNAL TARGETS FOR QUALITY IMPROVEMENT

The purpose of the internal OSFA quality improvement program is to establish mechanisms for measuring critical error-prone points in the delivery system and improving the way these activities are accomplished, if necessary. The section presents an analysis of critical activities in the student aid delivery system. The analysis recognizes the following features of the Federal role in the delivery system:

- There are more similarities than differences in the delivery systems for the major student aid programs, which suggests that an integrated approach to QC is desirable;
- Some critical activities are best addressed at a management level in OSFA since they cut across the entire delivery system;
- Other critical activities relate specifically to individual subsystems and programs.

First, there are similarities across the delivery systems for student aid programs by design. The Office of Student Financial Aid has a functional organizational structure that combines activities for many functions. Very often the same personnel work on all three programs. The current delivery system for the Pell, GSL and Campus-Based program has six subsystems:

- **Pre-application,** which refers to the program planning and budget development, information dissemination and other activities that usually take place prior to the start of an award year;
- **Student application,** which refers to the actual processing of student applications;
- **Student eligibility determination,** which refers to the process of determining categorical student eligibility and need for each program;
- **Student benefit calculation,** which refers to the process of calculating and packaging the awards;
- **Fund Disbursement,** which refers to the process of disbursing funds from the Federal government to students, institutions, guarantee agencies, and lenders;
- **Account Reconciliation,** which refers to the process of reconciling all accounts — for students, institutions, lenders, states and the Federal government — after the award year. For GSL, this is by definition a long-term process since the Federal government subsidizes interest on loans after they are made.

For the purpose of internal quality control in OSFA, the three student systems -- application, eligibility determination, and benefit calculation -- can be treated a single subsystem. The Federal government has relatively little direct involvement in these subsystems, except for the Pell program application process. Instead, campuses and, to a lesser extent, lenders and guarantee agencies are the primary actors in these subsystems.

Second, there are some critical activities in the delivery system that cut across all subsystems and are most appropriately addressed at a management level in OSFA. Two of these critical activities were addressed during Stage II of the Pell Grant Quality Control Study. One is vendor/processor quality control and quality assurance. Private contractors play an important role in each subsystem. As a result, vendor/processor quality assurance cuts across subsystems. One of the technical assistance activities in Stage II, Part I, was the development of guidelines for vendor/processor quality control for large processor contracts in OSFA and the development of a quality assurance manual for project officers for these contracts.

Another activity that clearly cuts across all subsystems is the Goals and Objectives System in OSFA. This system is used to monitor all delivery system activities for each program. During Stage II, Part I of the QC study, the Goals and Objectives System was also selected for technical assistance. In this area, the network approach to program management was pilot tested, and found applicable to the OSFA program management. This approach has not yet been implemented.

Third, there are numerous activities in the delivery system that are candidates for quality control and quality improvement that are most appropriately addressed on an activity-by-activity basis within subsystems. The purpose of this section is to identify the critical activities using a sound overall framework. Critical activities are delivery system procedures that are particularly error prone. The framework used to identify critical activities:

- Defines the subsystem;
- Identifies the goals of the subsystem;
- Identifies the quality control objectives for the subsystem;
- Identifies the relevant quality control measures;
- Identifies critical activities for quality control that correspond to these goals, objectives, and measures.

In the remainder of the section, the framework is applied to the four key subsystems in the student aid delivery. These are:

- Pre-application Subsystem;
- Student Application, Eligibility Determination, Benefit Calculation Subsystems;
- Funds Disbursement Subsystem;
- Account Reconciliation Subsystem.

Pre-Application Subsystem

The pre-application subsystem is the process for out year program planning. It includes all activities related to development of forms, budgets, and application information. Quality control in the pre-application subsystem is extremely important because this subsystem represents the design stage in the delivery system. Decisions made at this stage will affect program quality at nearly all subsequent stages. In other words, the quality of the student application, eligibility determination, and benefit calculation subsystems, funds disbursement subsystem, and account reconciliation subsystem are, at least in part, dependent on the quality of the policy decisions formulated in the pre-application subsystem. Therefore, effective quality control in the design stage can prevent many problems at subsequent stages. One mechanism for ensuring quality control in the pre-application subsystem is an independent program design review council that could provide management oversight on an ongoing basis.

The quality control goal of this subsystem is to conduct all pre-application activities in an efficient, timely, and responsive manner. Quality control objectives and measures are divided into those related to formulation of policy and those related to implementation of policy. This distinction is made to highlight the need for preventing potential error through quality control of the policy formulation process. The critical Federal activities at the delivery level in the pre-application subsystem are identified in Figure 3-3. The reasons for including these targets are considered below.

Of the targets already selected by OSFA, only the two management level QC targets -- vendor/processor quality assurance and the goals and objectives system -- explicitly address the pre-application subsystem. Vendor processor quality control

PRE-APPLICATION

The process that includes forecasting and developing budgets, developing and promulgating federal regulations, developing necessary forms, disseminating program information to participants, training participants, contracting and planning for services, determining institutional program eligibility, establishing payment systems, and planning for program specific procedures.

Goal:

Conduct all pre-application activities in an efficient, timely, and responsive manner.

Quality Control Objectives:

Policy Formulation -

- Review major policy changes
- Estimate impact of major policy changes
- Management oversight on major policy changes

Policy Implementation -

- Timely development of regulations
- Timely promulgation of regulations
- Timely development and printing of forms
- Adequate availability of information
- Timely information dissemination
- Timely and accurate responses to telephone and mail inquiries
- Timely determination of initial Pell authorization levels
- Accurate determination of initial Pell authorization levels
- Timely determination of Campus-Based allocations
- Accurate determination of Campus-Based allocations

Quality Control Measures:

Policy Formulation -

- Absence or presence of review on major policy changes
- Percentage increase or decrease in program error
- Absence or presence of management sign-off on major policy changes

Policy Implementation -

- Number of months from finalization of regulations to beginning of program year
- Number of months from promulgation of regulations to beginning of program year

FIGURE 3-3

CRITICAL ACTIVITIES IN THE
PRE-APPLICATION SUBSYSTEM

Number of months from development and printing of forms to beginning of program year
Number of months from forms development and printing to beginning of program year
Number of months from information dissemination to beginning of program year
Comparison between participant information needs and availability of information that is disseminated
Accuracy of answering participant questions by monitoring telephone calls and sampling mail responses
Number of days to complete initial authorization for Pell
Difference between initial authorization and final allocation in Pell
Number of days to complete authorization for Campus-Based
Percent of Campus-Based allocations that are appealed
Difference between tentative allocation and final allocation in Campus-Based.

Activities for Quality Control:

- ED development and promulgation of new regulations for each program as required
- ED development of forms including application forms and instructions, authorization letters, requests for payments and reimbursements, SARs, progress reports, validation rosters, FISAP, loan assignment forms, and teacher cancellation forms
- ED dissemination of program information through dear colleague letters, participant training, responses to participant inquiries, and development of handbooks and manuals
- ED initial authorization of institutional funds activity for Pell by DPO through the Pell Disbursement System
- ED tentative through final allocation of institutional funds for Campus-Based programs through FISAP processing in DPO.

FIGURE 3-3 (Cont.)

CRITICAL ACTIVITIES IN THE
PRE-APPLICATION SUBSYSTEM

relates to pre-application since the processor contracts, such as Pell, must be changed each year to incorporate new requirements, which is a process that should be monitored through vendor processor quality assurance. The Goals and Objective System explicitly acknowledges the planning (or pre-application) cycle, as well as delivery and wrap-up cycle of any program year.

Regulation development is important from a design perspective. The major design concepts are put into action in regulations, which highlights the importance of design reviews. A design review can be critical in many instances. It is possible the criteria-can be established internal to OSFA, to determine when a management review should be done. The development and promulgation of new regulations is often viewed as an important area of concern by the student aid community. The major problem, from the community's perspective, with this activity is the timing of new regulations relative to the time and costs of implementing them in the field. If there is ample lead time, campuses are more likely to be able to adjust to new regulations as part of a routine planning process. However, when new regulations come out just prior to or during the award year, the probability of error is increased due to the fact that adjustments must be made at the last minute, if they can be made at all. A QC analysis of this activity should be done from the perspective of the impact on the entire delivery system. Key measurement points could be identified that would provide OSFA managers and policy makers insight into possible problems before they happen.

The development and revision of forms is also a critical factor in filling out the right information at the right time. The Goals and Objectives System partially address the forms development process, since it is identified in this system. However, the impact of delays in these key forms has not been systematically analyzed. It is possible to develop a mechanism for monitoring the timeliness and availability of important forms.

Another critical pre-application activity the dissemination of program information through various sources. There was substantial criticism of OSFA during the recent public hearings that important information is simply not available when needed and that when it is available it is often contradictory. For example, state guarantors who operate in different states have observed that different regional offices interpret GSL regulations differently. During site visits, campus financial aid administrators observed that they often have to make numerous calls to OSFA to get answers to simple questions about the Federal end of the delivery system. This problem cuts across Divisions in OSFA and, therefore, should be addressed at the management level.

The initial authorization of funds for the Pell program is another critical activity that can be tracked through the quality control system. This activity sets an initial allocation which can cause major problems for the institution if it is too low and cause an excess of float if it is too large. A coherent and systematic approach to monitoring this activity could be developed within the Pell Grant Branch, DPO.

Student Application, Eligibility Determination, and Benefit Calculation Subsystems

The Federal government is not directly involved in most of the activities included in these subsystems. Therefore they were combined for this analysis. These subsystems represent the actual interface between the student and the delivery system, which takes place at several points. The Federal government is only directly involved in this subsystem for the Pell program. The quality control goal of this subsystem is the timely processing of applications and the accurate determination of eligibility and benefits.

The critical activities for this program are identified in Figure 3-4. These are the processing of applications, determination of eligibility and benefits for students applying to ADS institutions, and validation procedures used to verify selected application data items. All of these activities have already at least been partially addressed by the quality control study.

The processing of applications for Pell was treated explicitly in the report of vendor/processor quality control Procedures for improving quality control were actually built into the new Pell contract.

ED determination of eligibility for students attending ADS schools is the only delivery system activity that involves a direct interface between OSFA and students. Numerous quality control procedures, including sampling and error measurement, can be implemented for this activity, just as they can be implemented at the campus level. The campus level quality control guidelines that are currently being developed for OSFA can be adapted to this function. The validation procedures used by schools for RDS and ED for ADS is also addressed in the institutional quality control guidelines.

Fund Disbursement Subsystem

Fund disbursement is the process of disbursing program funds from the Federal government to state agencies, lenders, institutions, or students, and from institutions to students. The quality control goal of the funds disbursement subsystem is to

STUDENT APPLICATION, ELIGIBILITY DETERMINATION, AND BENEFIT CALCULATION

The process by which a student applies for financial aid either through a processor or institution, the processor or institution reviews the application for compliance with eligibility requirements, and award amounts or maximum loan amounts are determined.

Goal:

Timely processing of student applications and accurate determination of eligibility and benefits.

Quality Control Objectives:

Timely initial Pell processing
Timely Pell corrections processing
Reliable Pell processing
Accurate Pell categorical eligibility determination
Accurate Pell benefit calculation
Accurate Pell validation

Quality Control Measures:

Number of days between application receipt and mailing of SAR
Number of days between corrections receipt and mailing of corrected SAR
Percent of edit identified errors by Pell processor that are actual errors
Number of transactions per applicant
Percent of applicants ruled eligible who actually meet eligibility criteria
Percent of benefit calculations computed accurately
Percent of eligibililty determination errors remaining after validation

Activities for Quality Control:

- Processing of student applications, calculation of SAI, generation of SAR by Pell processor*
- ED determination of eligibility and benefits for students applying to ADS institutions*
- Validation procedures to verify SARs used by schools in RDS and by ED in ADS.

* Activity already at least partially addressed.

FIGURE 3-4

CRITICAL ACTIVITIES IN THE STUDENT APPLICATION, ELIGIBILITY DETERMINATION AND BENEFIT CALCULATION SUBSYSTEMS

transfer the right amount of money to the correct recipient at the proper time. Critical activities are identified in Figure 3-5.

Quality control procedures have already been developed for two activities in the funds disbursement subsystem: interest and special allowance payments in GSL and disbursement of Campus-Based funds through the FISAP. Quality control procedures for interest and special allowance payments monitored the accuracy of disbursements from ED to lenders and guarantee agencies by examining the efficiency of the receipt control process for 799 forms, the completeness of submitted 799 forms, the accuracy of calculations on the 799 form, whether duplicate payments were made to lenders or guarantee agencies, and the accuracy of Treasury vouchers authorizing payment. Processing timeliness was also monitored by ensuring that the date on the certification letter or Treasury memorandum for a voucher preceded the penalty date for a 799 form. This process has helped identify problem areas in the interest payment and special allowance procedures in need of corrective action and allows subsequent monitoring of the impact of the corrective actions.

Quality control work for FISAP concerned developing corrective action strategies for error-prone functions. Analyses were conducted of the most common errors committed in FISAP reporting and problems with FISAP procedures and forms.

ED disbursement of funds for the Pell program to RDS schools is a critical delivery system activity. It takes place as an integral part of the Pell Disbursement System. During the past year, the Pell Grant Branch of DPO has made several improvements in the accuracy of the process. The purpose of the quality control model would be to monitor the timeliness and accuracy of this process and to report on the financial implication of this process.

The ED disbursement of funds to schools in the Campus-Based program happens as a drawdown process. This activity is most appropriately addressed as an accounting issue since it currently has no mechanism, except audits, for determining if funds are being drawn down according to Federal regulations. The ED accounting system does not currently track these requests on a program basis. The routine tracking of this activity could result in significant cost saving due to the tightening of the float for institutions that draw down funds sooner than allowed by Federal guidelines.

ED disbursement of funds to ADS students is primarily an issue for reasons of timing. The Stage One Pell Quality Control study revealed that the actual disbursements for the ADS students are relatively accurate. However, the timing of disbursement can be problematic for ADS students and institutions. A quality control mechanism for this activity could monitor both timing and accuracy.

FUND DISBURSEMENT

The payment of program funds from the federal government to state agencies, lenders, institutions, or students, and from institutions to students.

Goal:

Transfer the right amount of money to the correct recipient at the proper time.

Quality Control Objectives:

Timely disbursements
Accurate disbursements
Minimize float
Accurate in-year program cost estimates

Quality Control Measures:

Number of days between scheduled disbursement date and actual disbursement date
Difference between actual disbursement and "correct" disbursement
Percentage of disbursements in error
Amount and timing of disbursement to institution compared to amount and timing of disbursement to student
Difference between actual program costs and estimated costs for program year

Activities for Quality Control:

- ED disbursement of funds for the Pell program to RDS institutions and RDS students through the Pell Disbursement System
- ED disbursement of funds for the Campus-Based program to institutions through the FISAP process*
- ED disbursement of funds for the Pell program to students in ADS institutions through the Pell Disbursement Processor
- ED payment of interest to lenders participating in the GSL program while student borrower is enrolled, in grace period, or is in deferment [illegible] and ED payment of special allowance to lenders to subsidize [illegible] anteed Student Loans*

* Activities for which control has already been at least partially addressed.

FIGURE 3-5

CRITICAL ACTIVITIES IN THE FUND DISBURSEMENT SUBSYSTEM

- ED payment of administrative cost allowances to guarantee agencies participating in the GSL program to compensate them for servicing costs

- Refunds in Pell program funds from institutions to ED for students who graduate early, withdraw, or drop below half-time enrollment during the time covered by the grant.

FIGURE 3-5 (Cont.)

CRITICAL ACTIVITIES IN THE FUND DISBURSEMENT SUBSYSTEM

ED payment of administrative cost allowances to guarantee agencies in the GSL program is another critical activity. ED currently has no mechanism for monitoring the accuracy and timeliness of this disbursement. It is possible that data reported to ED on quarterly reports could be better used for this purpose.

The collection of refunds in the Pell program is a critical activity that is difficult for ED to monitor. When there are changes in student enrollment status, this usually means that a refund is due to the Federal government, since most changes are for reduction in course load. Corrections to the SAR are usually not reported until the end of the year in the SVR. Analysis of this activity could focus on QC enhancements to the Pell Disbursement System.

Account Reconciliation Subsystem

The account reconciliation subsystem includes all processes required to reconcile program accounts for a given award year and collect loans. The QC goal in account reconciliation process is to eliminate incorrect payment through record reviews and audits and reduce loan default rates. The account reconciliation process provides a back end quality control for the entire system.

The critical activities in the Account Reconciliation Subsystem are identified in Figure 3-6. None of the quality control technical asistance provided during Stage II directly addressed the account reconcilliation subsystem. It is, therefore, a subsystem with several opportunities for quality improvement for internal quality control.

ADS account reconciliation for student accounts is one of the critical activities in the account reconciliation subsystem. The objectives of a quality control enhancement for this activity would be to develop a routine measure of the difference between the actual disbursement and what should have been disbursed.

Another critical activity is reconciliation of institutional accounts for Pell through the Pell Disbursement system. The problem with this activity is delays in the reconciliation process, possibly due to the absolute standard used for reconciliation. A QC study of this activity could focus on improved tolerance levels and standards for the reconciliation process.

A closely related activity is reconciliation of institutional accounts for Campus-Bank programs through the FISAP process. The verification of FISAP can be approached through detailed analysis of consistency on the FISAP form. This has been done on an ad hoc basis in the past by the Campus-Based Branch, DPO. A routine sampling procedure could be used.

ACCOUNT RECONCILIATION

The process of reviewing records and determining that the amount of program funds disbursed to each student, institution, lender, or guarantee agency is correct, and, the process of student loan repayment.

Goal:

Eliminate incorrect payments through record reviews and audits and reduce loan default rates.

Quality Control Objectives:

Accurate recapture of ADS student overpayments in Pell
Timely recapture of ADS student overpayments in Pell
Accurate recapture of institutional overpayments in Pell and unused funds in Campus-Based
Timely recapture of institutional overpayments in Pell and unused funds in Campus-Based
Accurate information on enrollment status for students with FISL loans
Accurate payments by lenders and guarantee agencies to ED for collections on defaulted loans
Timely payment by lenders and guarantee agencies to ED for collections defaulted loans
Accurate recapture of overpayments on claims for defaulted loans
Timely recapture of overpayments on claims for defaulted loans
Accurate information on borrowers teaching in low-income schools or in military or "Head Start" service
Timely collections on NDSL loans assigned to ED
Correct collections on loans assigned to ED
Accurate institutional audit and review procedures
Accurate guarantee agency audit and review procedures
Accurate lender audits and reviews
Accurate call reports and lender manifests in FISL
Timely call reports and lender manifests in FISL
Accurate quarterly reports, administrative cost allowance letters, and tape dump for GSL
Timely quarterly reports, administrative cost allowance letters, and tape dump for GSL

Quality Control Measures:

Difference between ADS student overpayment and ED collections
Number of months between end of award year and closing student account
Difference between institutional overpayments and ED collections
Number of months between end of award year and closing institution account
Elapsed time between change in enrollment status and receipt of information by ED for FISL borrowers
Difference between actual lender or agency collections on defaulted loan and amount reported to ED
Percent of collections on defaulted loans reported to ED in error

FIGURE 3-6

CRITICAL ACTIVITIES IN THE
ACCOUNT RECONCILIATION SUBSYSTEM

Number of days from lender or agency collection to transfer to ED
Percent of claim overpayments recaptured
Number of months from identification of claim overpayment to recapture of overpayment
Percent of borrowers with cancelled loans for which employment status data are accurate
Percent of loans assigned to ED upon which collections are made
Percent of institutional auditors and reviewers following required procedures
Percent of guarantee agency auditors and reviewers following required procedures
Presence of required data elements on call reports and lender manifests
Percent of lenders meeting ED reporting requirements for call reports and lender manifests
Number of days between due date of call reports and lender manifests and submission date
Completion of required data elements on quarterly reports, administrative cost allowance letters, and tape dump
Percent of guarantee agencies meeting ED reporting requirements for quarterly reports, administrative cost allowance letters, and tape dump
Number of days between due date of quarterly reports, administrative cost allowance letters, and tape dump and submission date

Activities for Quality Control:

- Student account reconciliation for students enrolled in ADS institutions
- Institutional account reconciliation through verification of student validation roster in Pell and through FISAP in Campus-Based
- Enrollment status reporting to determine if loan is eligible for interest subsidies for FISL and GSL
- Recapture of overpayments to lenders and state agencies on defaulted loans and capture of collections made by lenders and guarantee agencies on defaulted loans
- NDSL cancellation when a borrower is teaching in a low-income school or is in military or "Head Start" service and assignment of NDSLs in default for two years to the federal government for collection
- Institutional audits by independent auditor and program review by ED
- Guarantee agency audits by independent auditor and program review by ED
- FISL lender audits by independent auditor and program review by ED
- FISL lender reporting through call reports and lender manifests
- Guarantee agency reporting through quarterly reports, administrative cost allowance letters, and tape dump

FIGURE 3-6 (Cont.)

CRITICAL ACTIVITIES IN THE
ACCOUNT RECONCILIATION SUBSYSTEM

Enrollment status reporting to determine loan eligibility for interest subsidies is critical for FISL and GSL. For FISL, the timing of requests for enrollment verification has a built in problem for the Federal government; the bi-annual reporting for enrollment leaves too little time between verifications for students who drop out right after the report is made. For GSL, enrollment reporting is an extremely complicated process of concern to lenders, GAs and institutions. A number of quality improvements are possible in this process. The default rate for GSL and FISL could be reduced through such an effort.

For the claims and collections process in GSL and FISL the government lacks a systematic approach to check the reasonableness of claims. Therefore, the Federal government currently lacks the capacity to correct on overpayments. This is an area where an enhancement study would result in substantial savings.

NDSL cancellation and assignment of NDSL to the Federal government is another activity that has not had quality control checks in the past and where improvements are possible. A QC enhancement in this area could include a systematic sampling of cases to determine overall error rates.

Institution audits by independent auditors and program reviews by ED is another activity in which quality improvement could result in savings. While a school monitoring system for the DCPR review process is in the design stage, it has not been implemented and ED presently lacks the capacity to do analysis of sources of error. This information could be used for all aspects of OSFA management, from regulation development through account closeout.

Guarantee agency audits and program reviews is another activity where quality improvement could possibly lead to financial savings. ED currently lacks the systems auditors needed for thorough program reviews for GAs. A QC study in the area could more precisely identify the review needs for GAs.

The ED review of lenders suffers from a lack of a sound information system that can be used for analysis purposes. While lending institutions are generally highly regulated, there is now a real possibility that when lenders do submit a bill with errors it will go undetected by the Federal government. A GSL QC study may be necessary to define and measure lender error to provide a benchmark for the audit and review processes.

Guarantee agency reporting is another activity where quality improvement is needed. GAs report though quarterly reports, administrative letters and state tape dumps. The quarterly reports could be better utilized by OSFA for QC checks on

various aspects of the GSL reconciliation process. The state tape dump also offers possibilities in this area, but has not been consistantly reported to ED. The quality of data on all three reports has not been routinely checked by OSFA. The entire OSFA-state interface is an area where quality improvement is needed and a QC enhancement study is possible.

THE NEXT STEPS

OSFA has made substantial progress during the past three years in the design and implementation of an overall quality improvement program. The emphasis of the program during the first two years has been on the measurement component. During Stage One of the Pell Quality Control Study the emphasis was on error measurement for the Pell program. During Stage II the emphasis shifted to internal quality improvement within OSFA. During Stage Three, OSFA has maintained a dual emphasis on internal quality improvement and external measurement of error in Pell.

During Stage III of the Quality Control study, a strategic approach to internal quality improvement was developed, tested, and used to select high error prone targets. This chapter has reviewed those targets, identified overall strategies for quality improvement and identified new targets for quality improvement. Possible next steps in this internal quality improvement process are to:

- Select additional targets for technical assistance
- Develop procedures for internal QC development by operating units in OSFA.
- Develop the QCMIS reporting system.

First, it is now an opportune time for selection of additional targets for quality improvement. This chapter has presented a set of critical delivery system activities that can be selected for technical assistance during Stage Three of Quality Control Study. Work so far during Stage III, Part II, of the QC study, has included GSL reinsurance and refinement of the institutional QC guidelines.

Second, the OSFA should also consider development of guidelines for overall quality improvement in OSFA. A framework for this activity is considered in the next chapter.

Finally, OSFA should also consider development of a QCMIS for routine reporting on all quality control and quality improvement activities. The framework for this is presented in Appendix A.

CHAPTER 4
IMPLEMENTATION PLAN

This report has described the results of Stage Two, Part I of the Pell IQC Study, a design and technical assistance effort, and has focused on the measurement component of the OSFA Quality Improvement Program. In order to achieve the overall objective of this project, to design and implement an ongoing quality improvement program, OSFA must continue this systematic quality improvement effort. In order to facilitate the process, this concluding chapter considers:

- The overall Quality Improvement Program design;
- The implementation of the Quality Improvement Program;
- The development of a corrective action component;
- Priorities for action.

OSFA QUALITY IMPROVEMENT PROGRAM

OSFA has made a concerted effort over the past three years to identify and implement quality control measurement and to organize corrective action analysis. The Pell Grant Quality Control Project has proposed a wide range of corrective actions. These proposals have not adequately involved OSFA personnel, nor has a formal structure for corrective action been proposed previously as a result of the current project. This section considers the basic elements of a generalized quality improvement program for OSFA.

Quality improvement should be a goal of all Divisions in OSFA, not just DQA. Each Division should have an internal quality control plan. As part of this plan, records and documentation should be maintained and summary reports on performance sent to DQA. DQA's role in this process should merely be a monitoring or oversight one. Therefore, each division is responsible for quality control. Their roles can be distinguished from the responsibility of DQA whose responsibility is quality assurance.

The quality improvement program has two basic components; the technical QC system with an emphasis on measurement, and the analytic component with an emphasis on corrective actions. The major emphasis is in the design task on the technical measurement component which attempts to identify error-prone points in the financial aid program. Having identified these points, the objective of the corrective action component is to introduce program reforms which can increase overall program quality. The steps in the technical measurement and corrective action components, as well as the interaction between these components, is illustrated in Figure 4-1. Quality control has been defined as a process of identifying, correcting, and preventing error or a tendency toward error in a system. Therefore, as shown in Figure 4-1, a formal ongoing quality control effort must combine both a technical (or measurement) component and an analytic (or corrective action) component.

The technical component of the quality control process is already well into the design stage. Figure 4-1 shows that the technical component must include a capacity to:

- Define samples;
- Define measures;
- Establish standards;
- Develop measurement mechanisms;
- Implement measurement mechanisms.

The analytic or corrective action component of the overall quality control procedure is essential to close the loop and repeat the quality improvement cycle on an ongoing basis. The critical elements of the corrective action component, as shown in Figure 4-1, are:

- Comparison of actual performance with standards;
- Management selection of corrective action options;
- Implement corrective actions;
- Repeat the cycle.

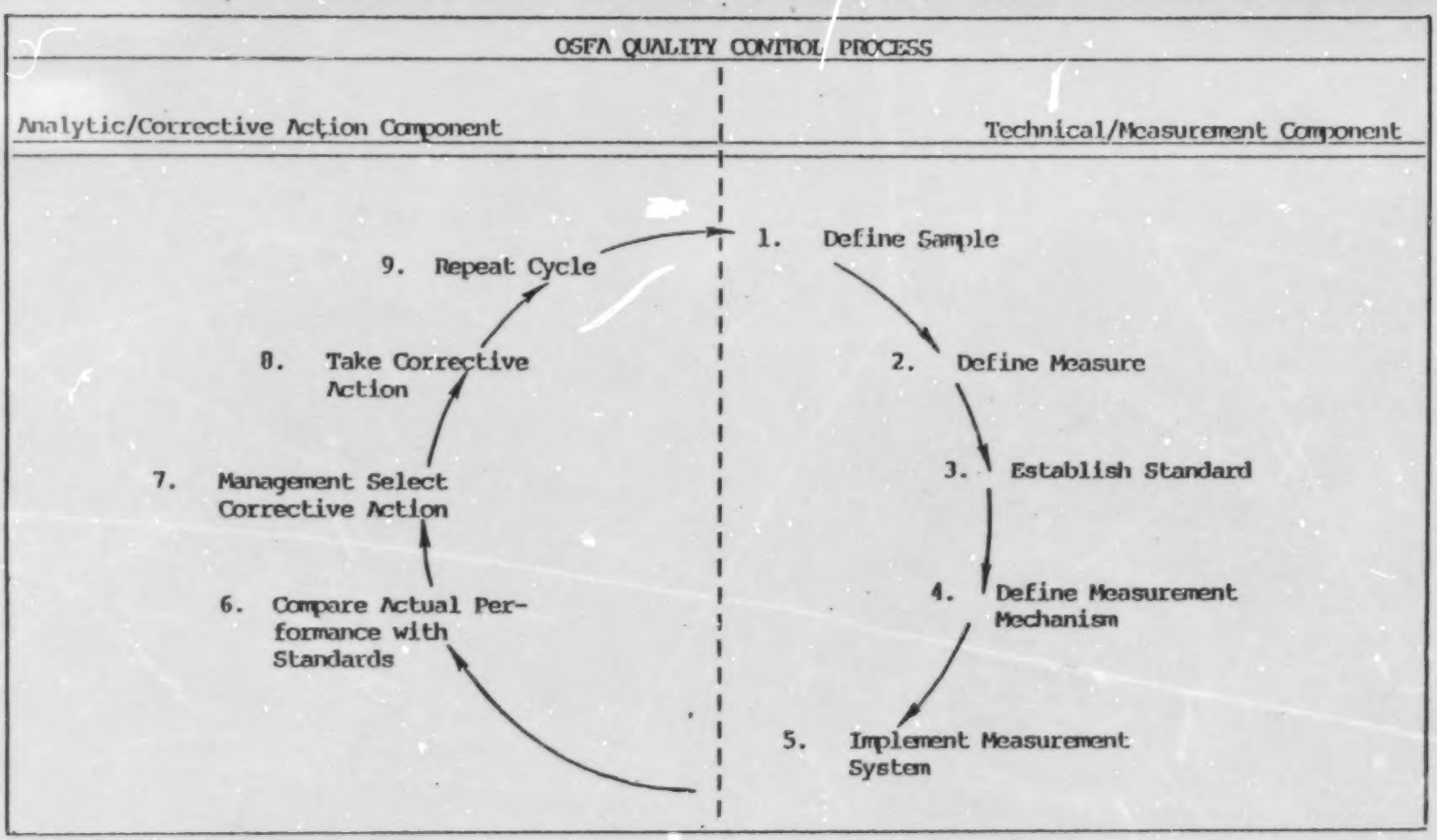

FIGURE 4-1

STEPS IN THE DEVELOPMENT OF AN OSFA QUALITY IMPROVEMENT PROGRAM

4-3

The development of a formal corrective process in OSFA would require significant changes in OSFA management. Some of the assumptions that were considered in the development of this framework were:

- The ongoing quality improvement program, especially the corrective action component, should be integrated into the overall management system in OSFA;
- The corrective action framework must interface with other management systems and procedures in OSFA, including the Performance Monitoring System (PMS);
- It is important that the corrective action component provide OSFA personnel with opportunities to initiate and receive recognition for corrective actions initiative, increased productivity, and error reduction;
- A management commitment to quality in OSFA is essential to the implementation of the overall QC system;
- The implementation of the corrective action component of the Quality Improvement Plan should be an integral part of the ongoing QC system.

When proposing that a formal organizational mechanism be established for the ongoing quality improvement program, it is necessary to consider the organizational intent in which the system will be implemented. In OSFA, features of the current system should be recognized in the overall design. These include:

- The formal management structure in OSFA and current initiatives to improve management;
- The placement of the new system in the organizational hierarchy.

The Office of Student Financial Assistance is organized into functional divisions with responsibility for different aspects of the delivery of all three programs. Divisions are further subdivided into branches. In some divisions, such as the Division of Program Operations and the Division of Policy and Program Development, there are separate branches for each major program (Pell, GSL, and Campus-Based). In others, branches are divided by function. For example, the Division of Certification and Program Review has five branches, each with responsibility for different functions. In the larger divisions, there are sections and units with further refined sets of responsibilities. Within this hierarchical structure, OSFA is in the process of implementing several significant management enhancements.

One of the major management enhancements that is currently being implemented in OSFA is the Goals and Objectives System. This system identifies goals, objectives, activities tasks, subtasks, and steps for the delivery of each major student aid program. This system has the potential of strengthening the management of individual programs as a complement to the functional management system that is currently in operation. It identifies units and individuals responsible for completing individual steps. Currently, OSFA is exploring a networking approach to the Goals and Objectives System which will improve its program management capability.

Another significant management enhancement being implemented in OSFA is the Performance Monitoring System (PMS). PMS will provide branches and sections in OSFA with a formal mechanism for:

- Identifying performance measures for individuals, units, sections, and branches;
- Reporting on routine performance of work activities;
- Establishing goals for improving performance within units;
- Monitoring performance of individuals, units, and sections;
- Evaluating performance of individual employees based on established criteria;
- Recognizing and rewarding exceptional performance.

This system involves employees in establishing criteria and setting performance goals. It is being implemented in branches where the work activities are of an ongoing repetitive nature, such as forms preparation or review.

Both systems will provide OSFA with an improved management capability. However, in spite of these innovations, the management structure in OSFA remains a hierarchical structure with a top-down information flow about policy and procedures, and a bottom-up flow of information about work performance. Consequently, the link between policy formulation and actual work activities in OSFA is undermined by the absence of information about the types of actions that can be taken to improve error-prone areas and functions in the delivery system. The quality control process, with its technical and analytic components, is intended to give OSFA a formal mechanism for strengthening this link. Both operating units and

OSFA management will participate in this process in distinct ways. Operating units will develop and implement their own quality control plans. The impact of these plans on quality performance will be monitored periodically by management through a quality assurance function. Formal coordination of the quality control and quality assurance functions could be assigned to a specially created body such as the Quality Council described later in this section.

The quality improvement program is intended to provide OSFA with technical and analytic support for the overall OSFA quality improvement process. The overall quality improvement process must be well integrated into the management structure of OSFA, as well as provide a mechanism for improving the linkage between policy formulations and organizational activities. An illustration suggesting the placement and the role of the corrective action process is presented in Figure 4-2. This placement and role is explained more fully in the following discussion. The basic design of the quality improvement process with its technical and analytic components, should enhance the roles of OSFA managers in instituting corrective processes in their units.

IMPLEMENTATION OF QUALITY IMPROVEMENT PROGRAM

The design of the OSFA quality improvement program must consider the formal organizational mechanisms required to put the framework into action. Four formal mechanisms are critical to implement the overall quality control process and the corrective action framework. These are:

- **Assign Responsibility**--an individual or group must coordinate the corrective action process;
- **Develop Procedures for Initiating Corrective Actions**--procedures must be developed to give OSFA personnel the opportunity to gain recognition for identifying corrective action options;
- **Develop Procedures for Implementing Corrective Action**--a formal mechanism for implementing new procedures related to the corrective actions component of the quality control process must be developed;
- **Develop a Reporting System Interface QCMIS**--the corrective actions framework must be integrated with the technical aspects of the quality control system.

Levels of Organization

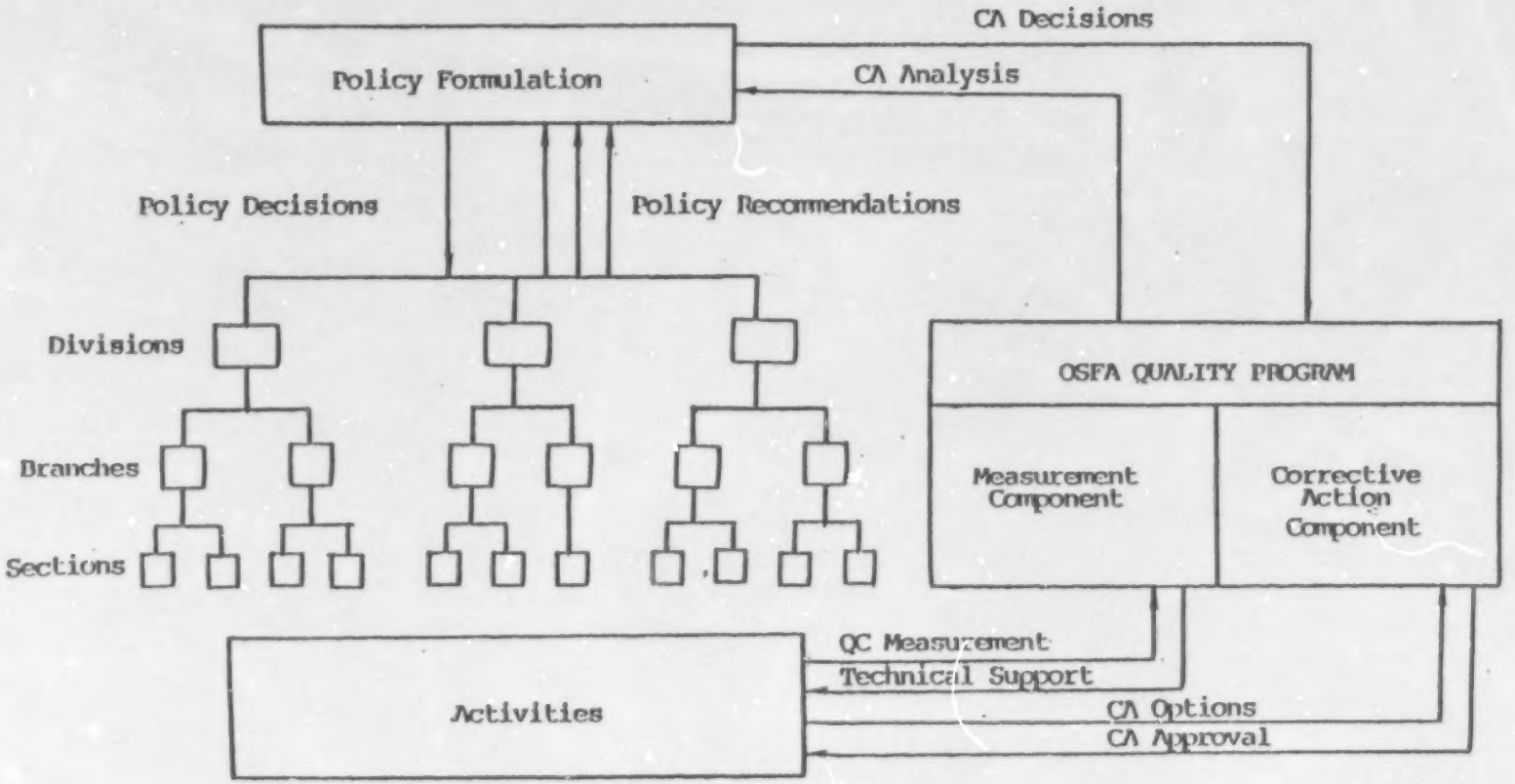

FIGURE 4-2

INTERFACE BETWEEN OSFA DECISION HIERARCHY AND QC PROCESS

4-7

Assign Responsibility

There are two optional approaches for formalizing the quality improvement program in OSFA. The first would simply require appointing a senior official to be responsible for the implementation of the overall program in OSFA. This official would designate staff responsibilities for implementing the process and for working with divisions and branches.

Alternately, the Deputy Assistant Secretary for Student Financial Assistance, in conjunction with Division Directors and Branch Chiefs, could appoint an OSFA Quality Council. The membership of the council, in combination, might include:

- Representatives from each of the OSFA Divisions;
- Individuals with responsibility for the areas identified earlier as targets for increasing program quality and reducing error in each Division or Branch;
- At least one representative from each program, GSL, Pell, and Campus-Based.

The Quality Council should be responsible for the overall quality control process, both the corrective action component and the technical component. The core component of the Council should consist of five to six senior managers since larger groups are more difficult to convene and manage. The core Council will be augmented by special subgroups assigned on a case-by-case basis to resolve particular problems. These subgroups will analyze the source of the problem, report back to the Council on perspectie corrective actions, and, subsequently be dissolved at the completion of their work. The DQA should provide staff assistance to the Quality Council. The purposes of this council should include additional:

- Responsibility for the OSFA quality assurance function;
- Approval of Branch and Division quality control plans (with particular emphasis on cross-divisional implications);
- Responsibility for implementing the corrective action process and developing OSFA policies and procedures for implementing and initiating corrective actions.

Since OSFA managers are joined on the Council by ad hoc subgroups of Division staff to meet particular needs, the Quality Council represents a combined management-staff initiative to maximize program quality. Management and staff working together to meet common goals can have numerous residual benefits to the efficiency of OSFA programs.

Corrective Action Procedures

Another important mechanism for the overall quality control process will be the development of a procedure for establishing corrective actions. This procedure should be established by the Quality Council or senior official in charge of corrective actions.

When establishing procedures for initiating corrective actions, the Quality Council or responsible individual should recognize the different types of corrective actions that can be taken. Specifically, the council should distinguish between:

- **Type 1—Working level** corrective actions that can be implemented at the spot where the worked is performed. Usually, the Section Chief or Branch Chief can approve this type of corrective action. The Quality Council or responsible individual should be concerned primarily with reporting of these actions to the QCMIS as a formal mechanism for monitoring marginal changes;

- **Type 2—Corrective action analysis** should be required for marginal changes that affect more than one division or have implications for the overall delivery system for one of the programs. The Quality Council or responsible individual may reserve the option to approve the selected option. In such cases, the corrective action analysis should consider

  - effects of the current procedures on key participants,

  - effects of options on key participants,

  - selected corrective action;

- **Type 3—Program level** corrective actions should be analyzed by the Quality Council or responsible individual. Again, the effects of the current system should be analyzed along with the differential effects of the marginal change options considered. Recommendations should be submitted to the Deputy Assistant Secretary for approval;

- **Type 4—Policy level** corrective actions usually require actions outside of OSFA. Some marginal changes, such as forms redesign or simplification, require policy decisions at the level of the Secretary and above. In these cases, the Quality Council or responsible individual should submit

recommendations to the Deputy Assistant Secretary. The Quality Council or reponsible individual should consider the types of additional procedures that would be necessary for Type 4 corrective actions.

The Quality Council will attempt to continually improve program performance and will introduce corrective actions for this purpose. The Council will not merely recommend necessary changes when program quality deteriorates to the point that it is not meeting specified standards. In other words, continued increase in performance will be the goal of the Council, rather than mere maintenance of the status quo.

Procedures for Implementing Corrective Actions

Whenever a corrective action has been approved, new working procedures are necessary. It is possible that these are never documented. Very often, formal written procedures will be necessary. For example, when the GSL Branch, DPO, undertook corrective actions in the area of manual interest billing, the branch instituted new procedures. At the very least, the Quality Council or responsible individual should establish an overall procedure for implementing corrective actions. This should include:

- Description of the corrective action;
- Description of activities' tasks and steps affected by the change (perhaps related to the Goals and Objectives System);
- Documentation of written procedures that are to be changed;
- Notation of new procedures that should be developed.

QCMIS Reporting

The corrective action system should feed directly into the quality control management information system. The corrective action reports to QCMIS should consist of:

- Summary reports from Divisions and Branches;
- Corrective action analysis reports;
- Corrective action implementation reports.

These reports will vary in frequency and purpose. Summary reports should be designed to provide periodic reporting on progress. Along with the implementation of the corrective action process, the reports could provide the basis of the corrective action reporting system. The type of corrective action analysis reports used would depend on the types of corrective actions being implemented according to the above framework. The corrective action implementation reports would provide a mechanism for reporting on the effects, or savings, of implementing each corrective action. Formal report formats could be developed for each type of report.

CORRECTIVE ACTION COMPONENT OF OSFA QUALITY IMPROVEMENT PROGRAM

The development of the corrective action component of the ongoing quality improvement program would represent a significant departure from past practice in OSFA. It would require building a commitment across OSFA to quality improvement. As discussed earlier, this would require a formal designation of a senior OSFA official or other person to be responsible for implementation of the quality improvement program, especially the corrective action component. The implementation of the corrective action component would require implementing a corrective action process.

The senior official appointed by the Deputy Assistant Secretary, or Quality Council, should initiate an annual quality improvement program in OSFA. This requires a significant investment in analysis. John L. Kidwell[1] observes:

> A quality improvement program is an investment; manpower will be spent if results are expected. In order to put everything into the proper perspective, a fact-finding activity is a prerequisite to this investment. One good way of involving the whole organization in this phase is to give key managers specific responsibilities in the fact finding. The recommended approach is through an appointment of an ad hoc team.

Kidwell recommends that the ad hoc team have the same membership requirements as the Quality Council recommended in the previous section. The basic steps proposed by Kidwell for the annual quality improvement analysis plan are:

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[1]John L. Kidwell, A Profit Plan for Quality, Waterford, Ct.: The John L. Kidwell Company, 1975.

- Determine quality policy and current compliance with quality policy;
- Determine or estimate quality costs;
- Identify dominant quality problems;
- Determine compliance to the operating units quality system;
- Identify the existing defect prevention system;
- Collate and analyze findings;
- Develop recommendations for unit management.

These steps are used here as a basis for an action plan for implementing the OSFA corrective action system. The action plan is outlined below.

Determine Quality Policy and Compliance

Determination of the OSFA quality policy could be one of the most critical tasks of the Quality Council. Kidwell defines quality as "that degree of excellence of a product or service that provides for full customer satisfaction over the expected life, with timely availability at a cost to the customer that he can afford, and at a profit to the procedures".[3] Clearly, this definition would have to be modified to fit a definition of quality for student aid delivery systems. It is possible that the QC objectives in each subsystem, identified in Chapter 3, could serve as a basis for developing the OSRA quality statement. Once the definition is developed, the Quality Council initiates the action plan. The first step in the action plan is for the Quality Council to request Division Directors to:

- Review OSFA quality definition and program requirements;
- Determine the applicability of the definition to their organization;
- Determine whether or not improvements in the operation are required to adopt the quality policy;
- Determine the extent to which current documentation and procedures are adequate.

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[2] Ibid, p. 34.

[3] Ibid, p.30.

Divisions and Branches may identify significant improvements that should be made. For larger Branches, the Branch Chief may need to involve section chiefs and unit chiefs in the program. The information generated from this process will provide a starting point for developing the corrective action system.

Estimate Quality Costs

Costs of Quality (COQ) is a concept Kidwell recommends for highlighting and displaying the "cost of unquality." According to this view, the concept of quality cost management is a simple one--"once you know these costs, you can take steps to reduce those costs that offend you".[4] In order to achieve this type of incentive structure, it is necessary for the units to report:

- Costs of quality program (either a QC module or system enhancements developed internally);
- Costs of losses caused by nonconformance to standards. (This will require fuller specification of loss or gains.)

This type of analysis can help Division and Branch Chiefs to identify areas where corrective actions can be implemented. For example, during the past year, both the Pell Branch and GSL Branch of DPO have implemented marginal changes that could result in substantial savings. The establishment of this type of reporting system would provide a formal mechanism for giving recognition for such enhancement.

The specific critical activities identified in Chapter 3 can provide a basis for this step. The focus of this preliminary analysis should be on identifying the amount of error in the system.

Identify Dominant Problems

The basic question here is, "What needs to be fixed?" Quality costs tell managers the areas where improvements are needed. The Pareto approach to corrective action analysis can be applied. This approach recognizes that 80 percent of the problems are caused by 20 percent of the cases; therefore, one Division and

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[4] Ibid, p. 36.

Branch managers should focus on their most error-prone areas. They should be asked to identify their own dominant quality problems, their seriousness and magnitude. They should be asked to separate the "vital few" problems from the "trivial many." Corrective actions should be directed toward important problem areas.

This list of critical activities also provides a basis for this step. OSFA managers, or perhpas the Quality Council, could go through this list to identify priorities for continued action.

Determine Compliance to Unit Quality System

This will be a two-step process. Since most units now have an overall quality improvement plan, it will be necessary to first develop a quality plan for the unit--this should evolve out of the review in the prior step.

Generally, organizations have two quality systems: The one they think they have, and the ones they actually have.[5] In order to determine the actual quality system, it will be necessary to ask OSFA managers:

- If the basic functions are being performed;
- If these are established standards for these activities;
- If these standards are actually adhered to;
- If the new standards are needed.

Kidwell recommends that the Quality Council establish a "Quality Audit Guideline." Once these guidelines are established, several quality audit teams should be formed to the selected areas. The audit teams should have the responsibility in the area being audited.

In OSFA, audit teams should work on those activities that are considered the highest priority. Technical assistance may be desired for some high priority targets. The emphasis should be on establishing and refining reasonable tolerance and standards for these critical activities.

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[5] Ibid.

Determine the Defect Prevention System

Defect prevention, especially marginal corrective actions, should be the responsibility of operating units. The corrective action procedures outlined in the previous section should help establish this principal in OSFA. The Quality Council should consider whether the operating units have internal corrective action systems. The basic question that should be asked of all managers is: What are the things you do, every day, in managing your workers, to prevent their making mistakes? The response will indicate the current defect prevention system in the unit.

The process implemented by the GSL Branch, DPO for the manual interest billing and reinsurance activity should serve as a model for this type of corrective action. In both cases, the Branch Chief took responsibility for identifying and correcting basic problems. Each of the critical activities could be managed similarly by Branch Chiefs and other managers on a project basis.

Collate and Analyze Findings

A significant amount of information will be generated from the prior steps. A critical task is to put these results together into a meaningful report. The report should focus on:

- Cause and effect relationship;
- The effects of the current system;
- The marginal changes that can be made to improve performance;
- Assessment of the likely effects of possible marginal change.

Most of the seriously negative effects of the current student aid delivery system can be improved through marginal improvements to the current system. The critical activities could all be the subject of this type of analysis.

Install Ongoing Corrective Action System

Once the Quality Council has been through this cycle, the basic parameters of the ongoing corrective action system can be defined and implemented. In fact, this

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process can become an annual corrective action process that can lead to ongoing refinement and improvement of the student aid delivery system. The implementation of corrective actions in each of the critical activities would not lead to improved overall performance of the delivery system.

PRIORITIES FOR ACTION

This report has summarized a two-year quality system design and technical assistance task that has focused on the development of an ongoing Quality Improvement program for the Office of Student Financial Assistance. In order to assure the continued implementation of the quality improvement program, the following priorities for continued action have been identified:

- Assign responsibility for quality program;
- Design and development of quality control management information system;
- Implement corrective action component of quality improvement program;
- Continue to develop selected targets of opportunity.

Responsibility for Quality Improvement Program

It has been proposed in this chapter that the Deputy Assistant Secretary for Student Financial Assistance designate a senior official responsible for the OSFA quality improvement program. Alternately, a Quality Council can be appointed to oversee the implementation of the quality improvement program.

Quality Control Management Information System

As indicated in Chapter 3, the Quality Control Management Information System (QCMIS) is the critical implementation link of the measurement component of the quality improvement program. The QCMIS shared emphasis:

- Refinement of reporting mechanisms from other OSFA quality control systems and subsystems, according to the framework that has already been established;

- Systematic analysis of policy and management issues inherent in the results of the ongoing measurement system;
- Possible inclusion of the corrective action component.

Corrective Action Component

The corrective action component of the overall quality improvement should involve all organizational units in OSFA in a systematic quality improvement program. It is possible that data analyzed as part of the Delivery System Assessment Task, Part II of Stage II, could be used to analyze and prioritize corrective action options for each delivery system activity. A blueprint for this type of involvement was discussed earlier. The reporting mechanism developed from this process could be incorporated into the QCMIS.

Targets of Opportunity

In addition to continuing development of the reporting mechanisms across the OSFA QC system, several of the targets of opportunity already considered are in need of continued technical assistance. Chapter 3 identifies a list of possible targets. These targets are summarized in Figure 4-3. This chapter proposes a strategy for developing a systematic framework for developing corrective actions for each target. The goal of OSFA should be to establish a corrective action agenda using this framework.

- **Vendor/Processor Quality Control and Quality Assurance Guidelines**
- **Goals and Objectives System**
- **Institutional Quality Control Guidelines**
- **FISAP Processing for Campus-Based Programs**
- **External Quality Control System**
- **GSL Manual Interest Billing**
- **GSL Reinsurance Claims and Collections**
- Program Regulations Development and Revision
- Forms Development and Revision
- Program Information Dissemination
- Pell Program Funds Authorization
- Pell Program Validation
- Pell Program Funds Disbursement
- Administrative Cost Allowances in GSL
- Pell Program Refunds Collections
- Student Account Reconciliation in ADS Institutions
- Institutional Account Reconciliation in Pell Program
- Institutional Account Reconciliation in Campus-Based Program
- Loan Eligibility Determination for Interest Subsidies in GSL
- Reasonableness Check on Insurance and Reinsurance Claims
- NDSL Cancellation and Assignment to ED
- Institutional Audits and Program Reviews
- Guarantee Agency Audits and Program Reviews
- Lender Audits and Program Reviews
- Guarantee Agency Reporting

NOTES:

Targets in BOLD indicate activities already at least partially implemented.

Targets with BOXES around them indicate activities that should be the highest priority.

FIGURE 4-3

SUMMARY OF QUALITY CONTROL TARGETS

APPENDIX A

QCMIS OVERVIEW

This appendix provides a framework for developing the OSFA Quality Control Management Information System (QCMIS). The concept behind the QCMIS framework is simple but effective. Based on the Pareto principle, which hypothesizes that 20 percent of the cases cause eighty percent of the problems, a strategic approach to QC development in OSFA was developed. The strategic approach assumes that the most error-prone areas should be selected for QCMIS development, and puts the 80/20 principle into action by targeting corrective actions on the 20 percent of the cases with the biggest problems. This strategy worked effectively during Stage II of the quality control study.

When fully developed the QCMIS should provide a defined set of inputs, processes and outputs for each component, or module, in the OSFA QC system. This appendix focuses exclusively on the outputs of the system. The QCMIS, as explained in Chapter 3, would consist of routine management reports on QC measurement of critical activities in OSFA. In addition to reviewing these report formats, this overview provides a framework for the Deputy Assistant Secretary for Student Financial Aid, or a Quality Improvement Council, to select new targets for QC development.

The overview is divided into three major sections. The first section considers the report formats for the external quality control system. The second reviews the report formats and options for the two management level quality control subsystems. Finally, the third section proposes a framework for identifying the quality control measurement that can be developed for the OSFA student aid delivery system. This section includes examples of report formats and sample applications of the framework. An objective of Stage III of the Pell Grant Quality Control Study will be to develop fully the specification for the OSFA QCMIS. The purpose of this appendix is to identify report formats for the QCMIS. It does not specify the system. The final section does, however, provide a framework that can be used to specify the QCMIS for critical delivery system activities.

EXTERNAL MEASUREMENT SYSTEM

The long-range goal of the OSFA Quality Improvement Program is to have ongoing external QC systems for all three major program components: Pell, GSL,

and Campus-Based. Currently only one of these has been developed—the Pell external QC measurement system. Stage I of the Pell QC study actually provided a measurement of the error levels for Pell. As part of Stage II of the Pell QC study, guidelines were developed for ongoing Pell QC measurement systems. During Stage III of the Pell QC study, this study is being replicated. It is possible that the Pell QC study could be extended to include the Campus-Based programs. The GSL programs would require a separate QC study since it would probably include lenders as well as applicants and postsecondary institutions. The report formats for the three components are described below.

For the Pell Grant Program, the key summary report for the QCMIS would give the summary estimation of institution and student error. The format for this report, as presented in the executive summary of Stage I of the Pell Grant QC study, Figure A-1, includes summary estimates for the net and gross number dollar error, the percent of individuals or institutions with errors, and the mean error amount. The table also provides an indication of the amount of overaward and underaward. The Pell QC studies, of course, provide more detailed results including specialized analyses of policy issues, but these basic summary reports can provide the basis for QCMIS reporting. Additional summary tables would provide a basis for QCMIS reports which include:

- Breakdowns for the size of disbursement errors (see Figure A-2 for an illustration);
- Impact of selected incorrect application items on grant disbursements (illustrated in Figure A-3);
- Summary of institutional error incidence (illustrated in Figure A-4).

For Campus-Based programs, the table structure would be similar, although the definitions of error, both for applicants and institutions, would vary considerably. As part of Stage III of the Pell Grant QC study, Advanced Technology is refining a list of error for institutional and student errors for the Campus-Based programs. When developed, these can be further refined into summary report formats for the QCMIS.

	ALL ERROR[2] DOLLARS	% OF RECIPIENTS	MEAN[3]	NET ERROR DOLLARS	% OF RECIPIENTS	MEAN[3]
Institution Error[1]	$210 M	37%	$ 89	$ 10 M	37%	$ 4
Student Error[1]	$395 M	44%	$167	$301 M	44%	$128
Total of Student & Institution Errors	$605 M	71%[4]	$256	$311 M	71%[4]	$132
Total Case Error	$568 M	71%[4]	$241	$312 M	71%[4]	$132

	OVERAWARDING ERROR DOLLARS	% OF RECIPIENTS	MEAN[5]	UNDERAWARDING ERROR DOLLARS	% OF RECIPIENTS	MEAN[5]
Institution Error[1]	$110 M	20%	$237	-$100 M	17%	-$243
Student Error[1]	$348 M	36%	$412	-$ 47 M	9%	-$237
Student and Institution Errors	$458 M	49%[4]	$396	-$147 M	22%[4]	-$283
Total Case Error	$440 M	49%[4]	$378	-$128 M	22%[4]	-$249

[1]Missing affidavits or statements of educational purpose and financial aid transcripts are not included as institutional error. Any cases with error greater than two dollars are included.

[2]Amount of error associated with all types of total institutional error plus all types of student error per recipients totalled independently.

[3]Mean for all recipients.

[4]Unduplicated count of institution and/or student error.

[5]Mean for cases with error.

Source: Advanced Technology, Inc., and Westat, Inc. Quality in the Basic Grant Delivery System, Executive Summary, p. 5.

FIGURE A-1

ESTIMATED INSTITUTION AND STUDENT ERROR

NOT INCLUDING AEP/FAT ERROR--1980-81

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AWARD ERROR	PERCENTAGE OF CASES ALL STUDENT & INSTITUTION ERROR	STUDENT & INSTITUTION ERROR NOT INCLUDING AEP/FAT ERROR	STUDENT ERROR NOT INCLUDING AEP/FAT ERROR
- $551 and less	2.3%	2.4	0.8
- $251 to - $550	4.9%	5.6	2.0
- $151 to - $250	3.4%	3.7	1.4
- $51 to - $150	5.4%	5.8	2.5
- $3 to - $50	4.2%	4.4	2.0
$2 to - $2	26.3%	28.6	53.7
$3 to $50	8.1%	8.8	5.0
$51 to $150	8.6%	8.9	6.3
$151 to $250	7.5%	7.9	6.1
$251 to $550	12.2%	11.9	9.5
More than $550	17.1%	12.1	10.8
Award Errors in Excess of $150	47.4%	43.5	30.5
Award Errors in Excess of $250	36.5%	32.0	23.1

Source: Advanced Technology, Inc., and Westat, Inc. Quality in the Basic Grant Delivery System, Executive Summary, p. 6.

FIGURE A-2

DISBURSEMENT ERROR BY RANGES

APPLICATION ITEM	RESULTING AWARD ERROR (NET IN MILLIONS)[1]	RESULTING INCREASE IN AWARDS PER STUDENT (NET)[2]
Adjusted Gross Income	$125	$53
Student/Spouse 1979 Income	43	18
Nontaxable Income (Other Than Social Security)	41	17
Household Size	35	15
Student/Spouse Assets 1979	26	11
Number in Postsecondary Education Institutions	13	5

[1] For policy purposes, the data from our sample are extrapolated to program-wide error levels. Note that there is substantial overlap of error amounts, so column total is larger than actual total student error. Data are rounded to the nearest million.

[2] Data are rounded to the nearest dollar.

Source: Advanced Technology, Inc., and Westat, Inc. Quality in the Basic Grant Delivery System, Executive Summary, p. 8.

FIGURE A-3

IMPACT OF SELECTED INCORRECT APPLICATION ITEMS

ON GRANT DISBURSEMENT ERROR

	ESTIMATED RECIPIENTS WITH ERROR	PERCENT OF ALL RECIPIENTS	MEAN ABSOLUTE ERROR FOR RECIPIENTS WITH ERROR
Total Institution Error	991,000	42%	$364
Institution Error without AEP/FAT Error	873,000	37%	$239
Components[1]			
AEP/FAT Error	181,000	7.7%	$933
BA and Citizenship Error	4,000	.2%	$849
Program Eligibility Error	31,300	1.3%	$789
Cost of Attendance[2]	354,000	15.0%	$177
Enrollment Status Error[2]	430,000	18.2%	$219
Calculation Error[2]	368,000	15.6%	$ 79

[1]Component figures are computed independently for each type of error. The sum therefore exceeds the total of all error, because error has been counted more than once in all cases where more than one type of error occurs.

[2]Estimated breakdown of institutional error components using Spring 1981 data. Final component figures will be derived from institutional reconciliation rosters as part of Stage Two of this project.

Source: Advanced Technology, Inc., and Westat, Inc. Quality in the Basic Grant Delivery System, Executive Summary, p. 9.

FIGURE A-4

SUMMARY OF INSTITUTIONAL ERROR INCIDENCE AND ABSOLUTE VALUE IN DOLLARS

For the GSL program these basic report formats would have to be revised to include lenders and guarantee agencies as well as students. The definition of errors will also vary for the GSL program.

MANAGEMENT LEVEL REPORTS

The design OSFA Quality Improvement program design includes two basic QC measurement modules that operate at the management level in OSFA. Both have elements that cut across programs and subsystems in the delivery systems. These are a vendor processor quality control system and a goals and objectives quality control system. An overview of the types of reports that could be developed for the QCMIS follows.

Vendor/Processor QC

The vendor/processor quality control subsystem is actually comprised of a series of contracts for the processing function for OSFA programs. The internal reporting forms developed for reporting on vendor/processor contracts are contained in Figure A-5. They include two types of performance data:

- Data on a series of key processing measures;
- Data on exceptions (measures of performance that are operating outside of established tolerance levels).

The form is designed for middle-level managers; therefore, only critical indicators of contractor performance are reported so that managers do not have to wade through excessive information to find the data they are interested in.

The section on key measures selects a number of key processing activities (in Pell, for example, these might be applications processing, corrections processing, correspondence service, and telephone service), and for each one, reports information on:

- Processing volume;
- Processing costs;
- Error rates.

Monitor's Name _____ Today's Date _____

Reporting Period: From _____
To _____

OSFA INTERNAL REPORTING SUMMARY FORM

SECTION I - KEY MEASURES

KEY MEASURE	KEY ACTIVITY #1			KEY ACTIVITY #2			KEY ACTIVITY #3			KEY ACTIVITY #4		
	This Period	Last Period	Year to Date	This Period	Last Period	Year to Date	This Period	Last Period	Year to Date	This Period	Last Period	Year to Date
Volume Information												
In												
Out												
Time (Average Processing/ Response Time)												
Cost Information												
Baseline Estimate												
Actual Cost												
Error Rate												
Standard												
Actual												

Other Key Measures	Standard	This Period	Last Period	Year to Date

FIGURE A-5
VENDOR/PROCESSOR QC TABLE SHELLS

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USFA INTERNAL REPORTING SUMMARY FOR...

SECTION 2 - EXCEPTIONS

PROCESSING FUNCTION	MEASURE OUTSIDE TOLERANCE	STANDARD	ACTUAL
1. PRODUCTION CONTROL:			
A. Information Receipt			
B. Data Entry			
C. Data Edit			

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FIGURE A-5 (Cont.)
VENDOR/PROCESSOR QC TABLE SHELLS

USER INTERNAL RECORDING SUMMARY FOR...

SECTION 2 - EXCEPTIONS (CONTINUED)

PROCESSING FUNCTION	MEASURE OUTSIDE TOLERANCE	STANDARD	ACTUAL
I. PRODUCTION CONTROL (CONTINUED):			
D. Compute			
E. Document Production and Mailing			
F. Corrections			

A-10

FIGURE A-5 (Cont.)

VENDOR/PROCESSOR QC TABLE SHELLS

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SECTION 2 - EXCEPTIONS (CONTINUED)

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PROCESSING FUNCTION	MEASURE OUTSIDE TOLERANCE	STANDARD	ACTUAL
2. FISCAL CONTROL			
3. SOFTWARE QUALITY ASSURANCE			

FIGURE A-5 (Cont.)
VENDOR/PROCESSOR QC TABLE SHELLS

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OSFA INTERNAL REPORTING SUMMARY FORM

SECTION 2 - EXCEPTIONS (CONTINUED)

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PROCESSING FUNCTION	MEASURE OUTSIDE TOLERANCE	STANDARD	ACTUAL
4. PRODUCTIVITY CONTROL			
Manual Procedure A			
Manual Procedure B			
Manual Procedure C			
Manual Procedure D			

FIGURE A-5 (Cont.)
VENDOR/PROCESSOR QC TABLE SHELLS

OSFA INTERNAL REPORTING SUMMARY FORM

SECTION 2 - EXCEPTIONS (CONTINUED)

PROCESSING FUNCTION	MEASURE OUTSIDE TOLERANCE	STANDARD	ACTUAL
5. REPORTING PROCESS			
6. CORRECTIVE ACTION PROCESS			

A-13

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FIGURE A-5 (Cont.)
VENDOR/PROCESSOR QC TABLE SHELLS

In addition, other key measures are presented and compared to predetermined standards to measure processing efficiency. (In Pell, other key measures may include the number of applications in the system more than 20 days, the number of corrections in the system more than 10 days, the percent of applications with more than one transaction, and the percent of edit identified errors that are real errors.) For each measure, data are reported for this processing period, the prior processing period, and the year-to-date. This use of trend data allows the identification of potential processing problems before they become actual problems and the prompt initiation of corrective actions.

The section on exceptions is divided into the various processing steps and substeps. These steps and substeps are:

- Production control;
  - information receipt,
  - data entry,
  - data edit,
  - compute,
  - document production and mailing,
  - corrections.
- Fiscal control;
- Software quality assurance;
- Productivity control;
- Reporting process;
- Corrective action process.

Since there are so many potential quality control measures in a vendor/processor contract, this section of the report is actually a table shell on which the monitor lists only measures that are operating outside of tolerance ranges. Depending upon contractor performance, the number of exceptions may run from zero to several dozen. This table shell approach provides a much more readable and useable format for managers than pre-printing all possible performance measures.

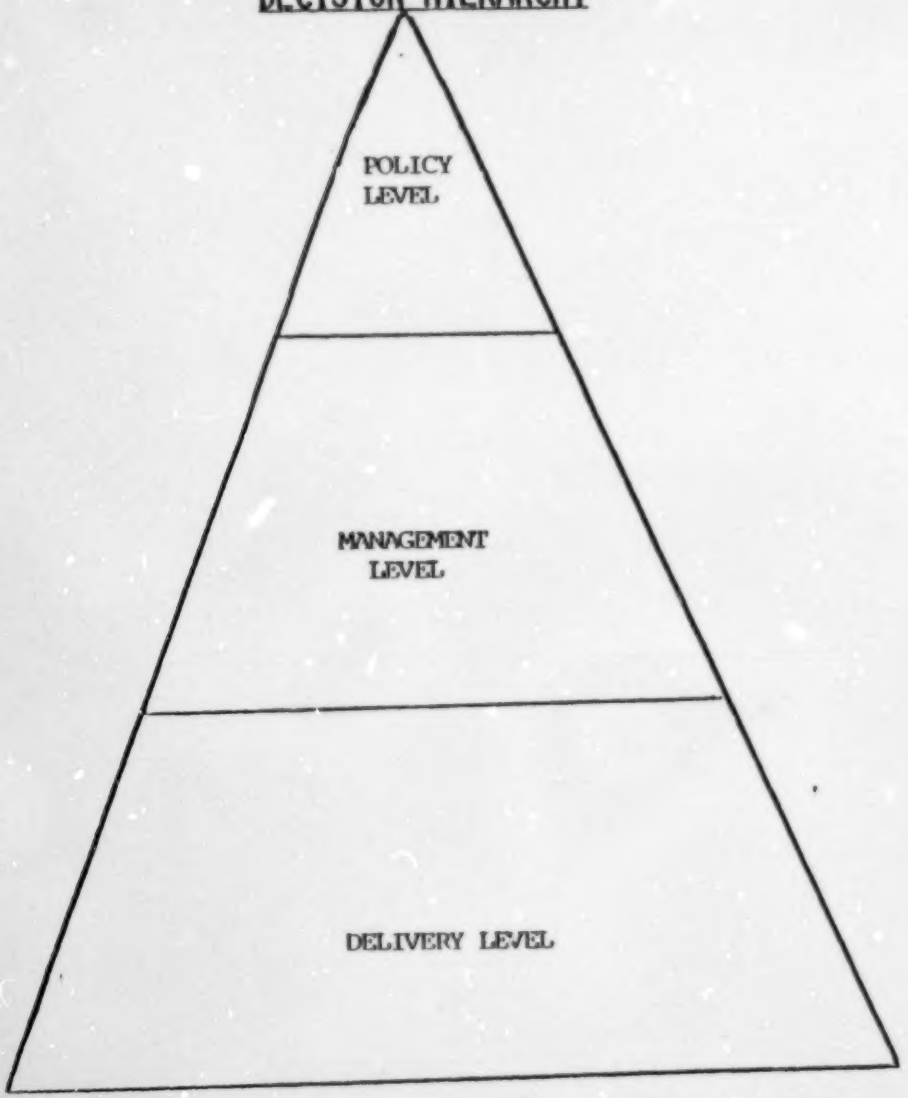
OSFA Goals and Objectives System

The basic reports for the current OSFA goals and objectives system consists of Gantt charts for all activities and tasks required to deliver student aid. As a part of the Stage II Pell Grant QC study, Advanced Technology did a QC enhancement study of this system. This enhancement study focused on testing the network concept for the delivery of student aid programs. It was concluded that the network approach could generate a variety of summary management reports. These include:

- A cost control Gantt chart for each phase of the process or function that displays the schedule status of activities to be accomplished within the Baseline Cost Estimate (BCE) funds available;
- A cost status report that lists fixed and variable costs with associated activities;
- A resource analysis report which describes, in dollars, the status of funds (budgeted or actual) within each cost center of the BCE;
- A cost-versus-time plot of budget-versus-obligated funds for each cost center of the BCE;
- A critical path of the activities network that routinely reports planned and actual achievement of project activities.

The OSFA Goals and Objectives system has the capacity to meet OSFA decision support needs, especially if the network approach is used. OSFA's decision support needs are illustrated in Figure A-6. All of these needs can be met by an automated networking system, such as the PRIME/VISION system used for the QC enhancement study.

At a policy-level, the Goals and Objectives system using the network approach can provide summary reports on the status of the delivery system, status reports on programs and subsystems, simulations of decision plans, and resource tracking and allocation reports. These reports can be tailored to meet the routine reporting needs of senior administrators or to provide early warning of system breakdown. Such decision support systems can also meet the detailed reporting needs of middle managers and operations managers.



REPORTING NEEDS

- Summary reports
- Status reports on programs and subsystems
- Simulations of decision options (what if?)
- Tracking and allocation

- Progress tracking and scheduling
- Interdependency visibility
- Identification of future task/activities
- Task/activity resource requirements

- Day to day activities/tasks/steps
- Precise responsibility identification
- Identification of required interfaces (inputs and outputs)
- Progress evaluation

FIGURE A-6

OSFA DECISION SUPPORT NEEDS

A-16

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DELIVERY LEVEL QC MIS FRAMEWORK

During Stage II of the Pell Grant Quality Control Study, OSFA experimented with the strategic approach to QC system development. The methodology proved effective at improving the capacity of operating units in OSFA to measure error and to design corrective actions. The major limitations of this approach were:

- OSFA had limited capability to identify error-prone points in the delivery system, since there was not a comprehensive QC framework;
- Onve an area was selected for QC development, the actual strategies for developing the QC measurement system had to be identified.

Based on the experience during Stage II, it is now possible to suggest the basic elements of such an analysis system. Two parts of the Stage II study can be used to suggest such a framework. First, the framework developed in the Delivery System Assessment Task, Part II of Stage II, provides a reference point and methodology for developing a comprehensive QCMIS framework, one that can be used to identify QC measures for key activities. Second, the experience with targets of opportunity during the Part I study can be used to help identify strategies for developing these QC measures.

A framework for developing a comprehensive QCMIS for the OSFA delivery system is proposed in this section. First, however, it is necessary to review the framework used in the Delivery System Assessment Task.

Delivery System Assessment Framework

The Delivery System Assessment Task used a very detailed methodology to specify the current student aid delivery system, to develop a model to measure its effects, and to apply this model to the current system. This same methodology can be adapted to develop a QC measurement framework.

The methodology for developing the analytic model for the Delivery System Task required taking a series of analytic steps. These were:

- Step 1: Specify the current delivery system in the form of input-process-output (IPO) chains.
- Step 2: Develop independently a detailed list of program features for each program.
- Step 3: Determine which program features influence each delivery system activity.
- Step 4: Determine the intervening variables that are relevant to each delivery system activity.
- Step 5: Determine which effects are influenced by each delivery system activity.
- Step 6: Develop measures for each effect at each delivery system activity.
- Step 7: Identify existing data sources or develop new data sources for each measure.
- Step 8: Identify methods of analysis for each effect at each system step.

This process resulted in a preliminary specification of the entire student aid delivery system. This specification is currently being revised. The refined list of delivery system activities is contained in Figure 3-6 in Chapter 3. A series of reports were generated during the course of this analysis. These were:

- A review of previous approaches to delivery system issues, which resulted in a **context paper**;
- A **preliminary model**, which provided the logic for developing the detailed model;
- A **specification of the current system**, including program features (from laws, regulations, and administrative decisions) and system steps (in the form of input, process, output chains) for each activity in the delivery system;
- A **general assessment model**, which identifies intervening variables and effects for each delivery system activity;
- An **analytic agenda**, which identifies measures, data sources, and methods of analysis for each effect.

The three key reports in this series, as far as the methodology for the QC measurement framework is concerned, are the specifications, the general model,

and the analytic agenda. The relationship between the three documents is illustrated in Figure A-7. The specification document identified the program features and delivery system steps associated with each activity in the current delivery system.

The General Assessment Model is being applied currently in the analysis of the effects of the current delivery system alternatives. The steps required to apply the model are:

- **Evaluate the current system,** including an estimation of baseline effects on all participants;
- **Identify delivery system alternatives,** based on review of past proposals and community input;
- **Specify selected alternatives,** including program features and system steps;
- **Assess alternatives,** including estimation of differential effects on participants;
- **Specify intent,** perhaps in different ways;
- **Rank alternatives** according to specification of intent.

If the QC development framework is developed, then it can be systematically applied, using the strategic approach, to high error-prone points in the delivery system. In fact, the results of the assessment of the current system can be used to identify error-prone points.

Delivery Level QC Measurement Framework

The framework and analysis completed as part of the Delivery System Assessment Task provide the basis for the proposed framework for the delivery level QC measurement framework. There are two key steps in the development of the framework.

First, the specifications document provides a starting point for specifying the types of quality control that can be developed for each critical activity. Figure A-8 illustrates the framework for doing this. The specification of the current system

HYPOTHETICAL PROGRAM
STUDENT APPLICATION SUBSYSTEM
ACTIVITY: SUBMISSION OF FINANCIAL STATEMENT

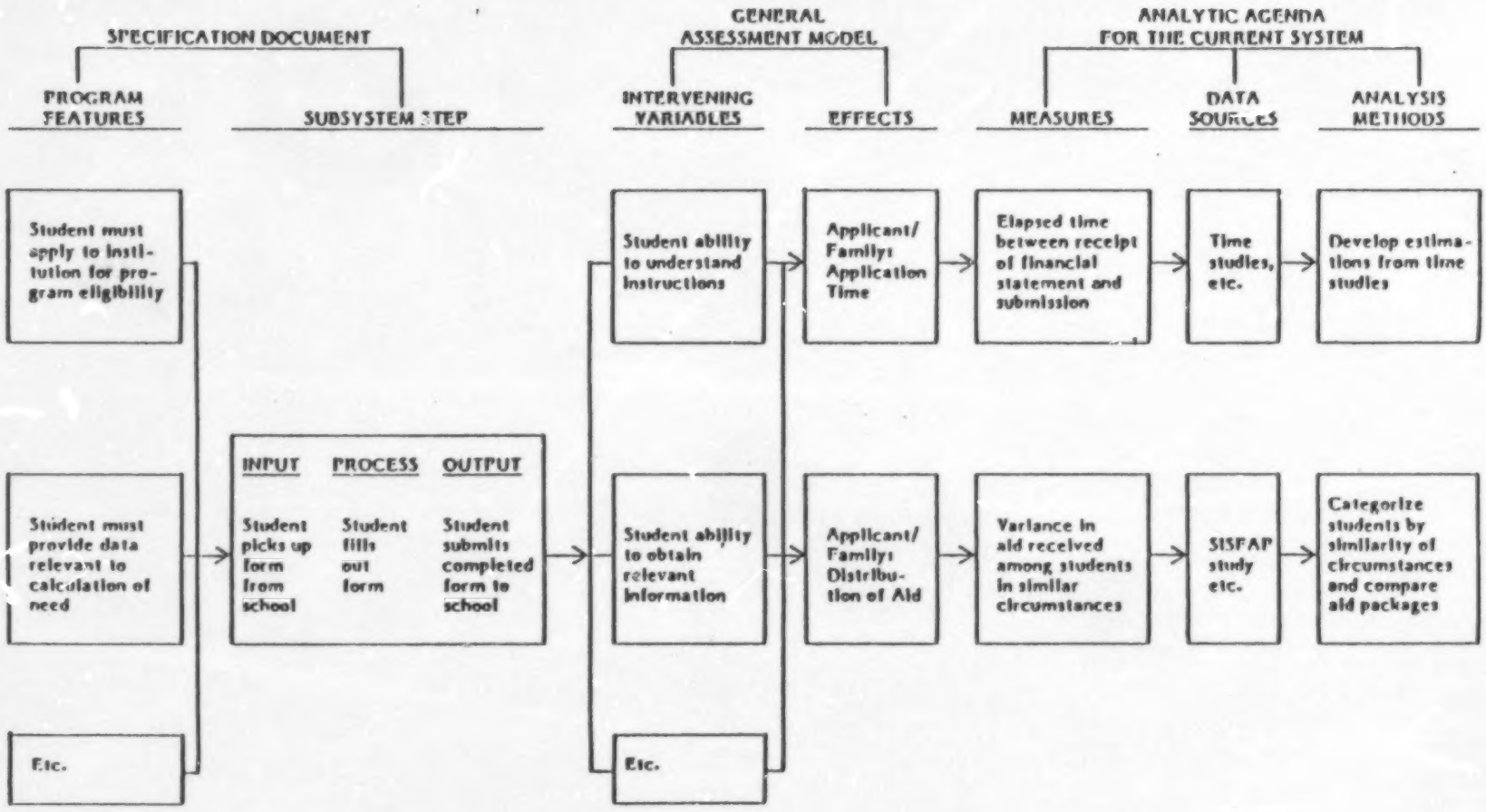
SPECIFICATION DOCUMENT
GENERAL ASSESSMENT MODEL
ANALYTIC AGENDA FOR THE CURRENT SYSTEM
PROGRAM FEATURES
SUBSYSTEM STEP
INTERVENING VARIABLES
EFFECTS
MEASURES
DATA SOURCES
ANALYSIS METHODS
Student must apply to institution for program eligibility
Student must provide data relevant to calculation of need
Etc.
INPUT
PROCESS
OUTPUT
Student picks up form from school
Student fills out form
Student submits completed form to school
Student ability to understand instructions
Student ability to obtain relevant information
Etc.
Applicant/ Family: Application Time
Applicant/ Family: Distribution of Aid
Elapsed time between receipt of financial statement and submission
Variance in aid received among students in similar circumstances
Time studies, etc.
SISFAP study etc.
Develop estimations from time studies
Categorize students by similarity of circumstances and compare aid packages

FIGURE A-7

SCHEMATIC PRESENTATION OF STEPS REQUIRED TO DEVELOP THE ANALYTIC MODEL

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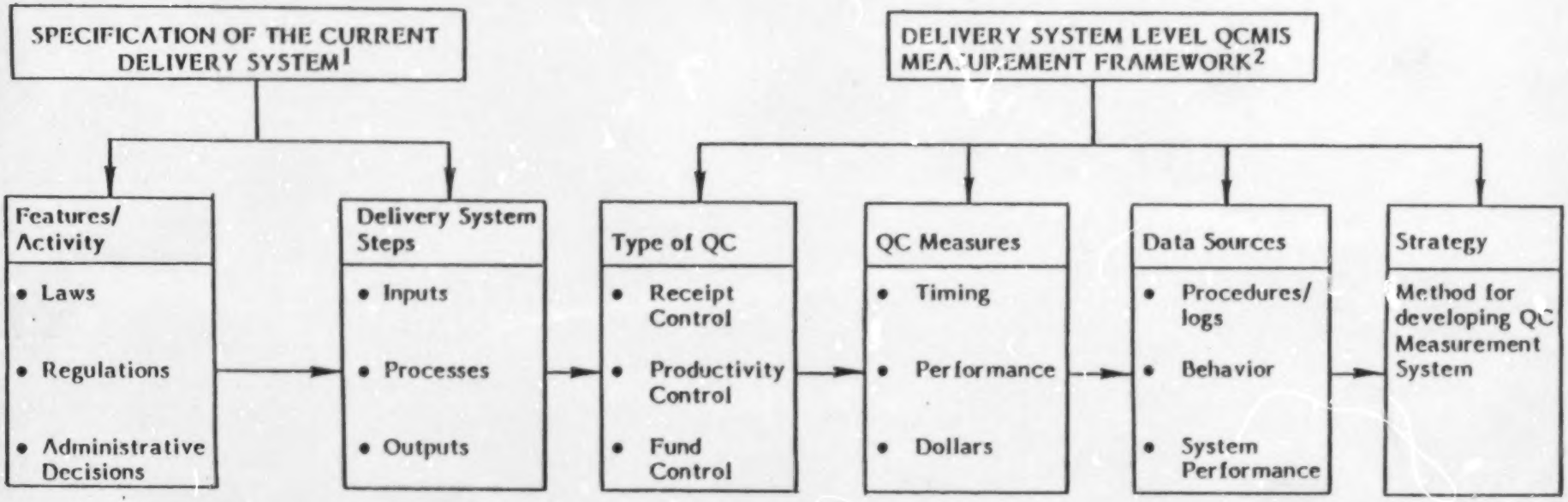

[1] A preliminary specification for the current student aid delivery system was developed by Advanced Technology, Inc., as part of the Delivery System Assessment Task. This specification is currently being revised to incorporate input from OSFA personnel.

[2] The format for this report will be similar to the "Analytic Agenda to the Current System," developed as part of the Delivery System Assessment Task. The content will reflect the findings of that analysis.

FIGURE A-8

CONCEPTUAL FRAMEWORK FOR THE DELIVERY SYSTEM LEVEL QCMIS

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identifies the program features for each activity, as well as the delivery systems required to complete each activity, in the form of inputs, processes, and outputs. It is possible to use those specifications to develop the QC framework. Specifically, for each critical activity, it would be necessary to:

- Identify the types of quality control that apply, including receipt control, productivity control, and fund control;
- Identify the specific QC measures that apply such as timing of receipt of documents and completion of reviews for production control;
- Identify potential data sources for all measures;
- Identify the specific strategies that could be used to develop the QC measurement component.

For illustrative purposes these steps have to be applied to two delivery system activities. Figure A-9 applies it to activity 2; student application examples illustrates how the vendor/processor function for Pell would be illustated in this framework. The second illustration is Figure A-10, activity 6.6, GSL claims and collections, which is an activity that is currently being reviewed for QC.

The second key element of the framework will be the reanalysis of the results of the assessment of the current delivery system, which has been recently completed. The assessment of the current system provides baseline measures for each delivery system effect and analyzes how individual activities contribute to each effect. A reanalysis of this data could help inform the QC framework in two ways. These are:

- The analysis would be used to identify the measurement strategies for each activity;
- It could also be used to identify error-prone points in the delivery system.

Both of these features are critical to the QC measurement framework. One of the major obstacles impeding the widespread application of the strategic approach is that the specific factors that should be measured—the types of QC that apply, the possible measures, and the strategies for developing the measures—must be developed on an ad hoc basis. This framework, building on the experience gained in

TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Receipt Control	• Count of applications received	• QC and QA sample	• Compare counts of incoming documents to counts at various production steps
	• Backlog of applications	• Contractor data base and QA sample	• Analyze efficiency of processing by measuring backlogs
	• Processing time from receipt to data entry	• QC and QA sample	• Take independent sample of documents received, assign ID number, record date and time of entry into system, and track through processing stream
	• Count of applications flagged by cursory edit	• Contractor data base	• Analyze accuracy of edit procedures
	• Count of the number of times a particular edit is used	• Contractor data base	• Analyze reliability of edit procedures
	• Percent of errors in sorting applications by type	• QC and QA sample	• Analyze the accuracy of information sorts
Productivity Control	• Count of applications entered versus counts at various automated processing steps	• Contractor data base	• Analyze whether applications are being lost after entry
	• Count and percentage of errors by keystroke, data element, and form	• QC and QA sample	• Take an independent sample of input documents and compare transformed data to original documents for accuracy

FIGURE A-9

EXAMPLE #1 OF DELIVERY LEVEL (QCMIS) FRAMEWORK: STUDENT APPLICATION ACTIVITY (FOR AN APPLICATION PROCESSING CONTRACT)

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TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Productivity Control (Cont.)	• Backlog of applications	• Contractor data base	• Analyze efficiency of data entry by measuring backlogs
	• Processing time from receipt at keypunch to completion of data entry	• QC and QA sample	• Take independent sample and monitor processing time from receipt at key-punch to data entry
	• Count of telephone inquiries	• Contractor data base	• Analyze telephone inquiry logs
	• Percent incoming calls placed on hold	• QC and QA sample	• Independently monitor operators and record number of calls placed on hold
	• Average length of time calls placed on hold	• QC and QA sample	• Independently monitor operators and record length of time call is on hold
	• Count of number of calls per application	• Contractor data base	• Analyze telephone inquiry logs and assess how well overall processing system works and how understandable procedures are to applicant
	• Accuracy of answering applicant questions	• QC and QA sample	• Independently monitor operators for accuracy by phoning in typical questions and recording accuracy of response

FIGURE A-9 (Continued)

EXAMPLE #1 OF DELIVERY LEVEL (QCMIS) FRAMEWORK: STUDENT APPLICATION ACTIVITY (FOR AN APPLICATION PROCESSING CONTRACT)

TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Fund Control (Cont.)	• Actual versus budgeted processing costs by cost center	• Contractor data base	• Analyze cost trends by cost center. (For CPFF contract only)
	• Actual unit costs versus budgeted unit costs	• Contractor data base	• Analyze unit cost by time period since cost may vary based on volume

FIGURE A-9 (Continued)

EXAMPLE #1 OF DELIVERY LEVEL (QCMIS) FRAMEWORK: STUDENT APPLICATION ACTIVITY (FOR AN APPLICATION PROCESSING CONTRACT)

TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Receipt Control	• Count of claims received	• Processing information at Student Loan Processing Center (SLPC)	• Compare counts of 1189 forms received to counts at various production steps
	• Count of collections received	• Processing information at DPO	• Compare counts of 1189-2 forms received to counts at various production steps
	• Processing backlog of claims	• Processing information at SLPC	• Analyze efficiency of 1189 processing by measuring 1189 form backlogs
	• Processing backlog of collections	• Processing information at DPO	• Analyze efficiency of 1189-2 processing by measuring 1189-2 form backlogs
	• Processing time from receipt to data entry (claims)	• Processing information at SLPC and QC data	• Assign all claims an ID number, record date and and time of entry into system, and track through processing stream
	• Processing time from receipt to data entry (collections)	• Processing information at DPO and SLPC plus QC data	• Assign all collections an ID number, record date and time of entry into system, and track through processing stream
	• Count of claims flagged by edits	• Processing information at SLPC	• Analyze accuracy of edit procedures for 1189 forms

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FIGURE A-10

EXAMPLE #2 OF DELIVERY LEVEL (QCMIS) FRAMEWORK:

CLAIMS AND COLLECTIONS ACTIVITY

TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Receipt Control (Cont.)	• Count of collections flagged by edits	• Processing information at DPO and SLPC	• Analyze accuracy of edit procedures for 1189-2 forms
Productivity Control	• Count and percentage of errors by keystroke, data element, and form	• Processing information at SLPC and QC data	• Take independent sample of claims and collections and compare transformed data to original 1189 and 1189-2 forms
	• Backlog of claims and collections	• Processing information at SLPC	• Analyze efficiency of 1189 and 1189-2 data entry by measuring backlogs
	• Count of claims and collections received compared with counts of claims paid and checks desposited	• Processing information at SLPC and DPO	• Compare counts from control logs at SLPC and DPO to claims and collections data at Office of Financial Management Services (OFMS)
	• Accuracy of rebalancing 1189 totals to reflect rejected transactions	• Processing information at DPO and QC data	• Design formal staff procedures and provide training on procedures. On sample basis, validate computations
	• Accuracy of resolving adjustments to balances	• Processing information at DPO and QC data	• Design formal staff procedures and provide training on procedures. On sample basis, validate computations

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FIGURE A-10 (Cont.)

CLAIMS AND COLLECTIONS ACTIVITY

EXAMPLE #2 OF DELIVERY LEVEL (QCMIS) FRAMEWORK

TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Productivity Control (Cont.)	• Accuracy and timeliness of responding to questions from state agencies	• Processing information at DPO and QC data	• Take sample of correspondence received from state agencies and monitor accuracy of response and response time
	• Accuracy of preparing voucher (1166 form)	• Processing information at DPO and QC data	• Design formal staff procedures and provide training on procedures. On sample basis, validate computations
Fund Control	• Number of overpayments and underpayments	• Processing information at DPO and QC data	• Design formal staff procedures and provide training on procedures. On sample basis, verify claims paid against 1189 form
	• Number of duplicate payments	• Processing information at BCS	• Analyze accuracy of edit routine to prevent duplicate payments
	• Accuracy of collections data	• Processing information at DPO and QC data	• Design formal staff procedures and provide training. On sample basis, verify collections received against 1189-2 form. Design procedures to separate collections into principal and interest

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FIGURE A-10 (Cont.)

CLAIMS AND COLLECTIONS ACTIVITY

EXAMPLE #2 OF DELIVERY LEVEL (QCMIS) FRAMEWORK

TYPE OF QC	MEASURES	DATA SOURCES	STRATEGY
Fund Control (Cont.)	• Timeliness of claims and collections	• QC data	• Develop method for accurately aging accounts by state
	• Percentage of vouchers representing valid obligations	• Processing information at DPO and OFMS	• Unify data bases of DPO and OFMS

FIGURE A-10 (Cont.)

CLAIMS AND COLLECTIONS ACTIVITY

EXAMPLE #2 OF DELIVERY LEVEL (QCMIS) FRAMEWORK

the earlier analysis would identify these factors. This identification of measurement strategies could be informed by the analysis that has already taken place.

Additionally, the reanalysis of the evaluation of the current system would identify error-prone points in the delivery system. This analysis could focus on identifying the activities in the delivery system that cause the most problems to the Federal government, states, institutions, and applicants.

In summary, the near completion of the Delivery System Assessment Task provides OSFA with an excellent opportunity to develop a solid and comprehensive QC framework for the student aid delivery system. The results of this analysis provide a starting point, methodology, and data base for such an exercise.

APPENDIX B

LIST OF CURRENT DELIVERY SYSTEM ACTIVITIES

This chart lists the activities by sub-system which are currently utilized to implement the Pell Grant, GSL and Campus-Based programs. The purpose of this chart is two-fold, it acts as a table of contents for the specification charts, and it notes activities which are currently integrated to some degree across the three program components. Activities which are at least partially integrated across the three programs are marked with an asterisk (*).

THE PELL COMPONENT

1. Pre-Application Subsystem
   - 1.1 ED Budget Forecasting
   - *1.2 ED Budget Development
   - *1.3 Development and Promulgation of Federal Regulations
   - *1.4 ED Forms Development
   - *1.5 ED Information Dissemination and Training
   - *1.6 ED Contact Development and Support
   - *1.7 ED Systems Planning and Revision
   - *1.8 ED Determination of Institutional Eligibility and Certification
   - 1.9 Establishment of Payment Systems for RDS Institutions[1]
   - 1.10 ED Initial Authorization of Funds to RDS Institutions
   - *1.11 Institutional Planning and Information Dissemination

THE GSL COMPONENT

1. Pre-Application Subsystem
   - 1.1 ED Budget Forecasting
   - *1.2 ED Budget Development
   - 1.3 ED Clearance of GA Regulations, Forms and Manuals
   - *1.4 Development and Promulgation of Federal Regulations
   - *1.5 ED Forms Development
   - *1.6 ED Information Dissemination and Training
   - *1.7 ED Contract Development and Support
   - *1.8 ED Systems Planning and Revision
   - *1.9 ED Determination of Institutional Eligibility and Certification
   - 1.10 Optional GA Determination of Institutional Eligibility
   - 1.11 GA Determination of Lender Eligibility
   - *1.12 Institutional Planning and Information Dissemination
   - 1.13 GA Planning and Information Dissemination
   - 1.14 Lender Planning

THE CAMPUS-BASED COMPONENT

1. Pre-Application Subsystem
   - *1.1 ED Budget Development
   - *1.2 Development and Promulgation of Federal Regulations
   - *1.3 ED Forms Development
   - *1.4 ED Information Dissemination and and Training
   - *1.5 ED Contact Development and Support
   - *1.6 ED Systems Planning and Revision
   - *1.7 ED Determination of Institutional Eligibility and Certification
   - 1.8 Establishment of Payment Systems for for Institutions[1]
   - 1.9 ED State Allotment
   - 1.10 Institutional Application for Funds
   - 1.11 Tentative Institutional Allocation of Funds
   - 1.12 Appeal of Tentative Allocation
   - 1.13 Final Allocation
   - 1.14 Low-Income School List Development
   - *1.15 Institutional Planning and Information Dissemination

[1] This activity is identical and completely integrated for the Pell and Campus-Based components.

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THE PELL COMPONENT (CONT'D)

2. Student Application Subsystem
   - *2.1 Student Application

3. Student Eligibility Determination Subsystem[2]
   - *3.1 Student Eligibility Determination
   - *3.2 Validation

4. Student Benefit Calculation Subsystem[2]
   - *4.1 Student Award Calculation (RDS)
   - *4.2 Student Award Calculation (ADS)

5. Funds Disbursement Subsystem
   - 5.1 ED Disbursement to Institutions[3]
   - 5.2 RDS Institution Disbursement to Student
   - 5.3 ED Disbursement to ADS Students
   - *5.4 Refunds

6. Account Reconciliation Subsystem
   - 6.1 RDS Institution Reporting to ED
   - 6.2 Student Account Reconciliation
   - 6.3 RDS Institution Account Reconciliation
   - *6.4 Institutional Audit
   - *6.5 ED Program Review of Institutions

THE GSL COMPONENT (CONT'D)

2. Student Application Subsystem
   - *2.1 Student Application

3. Student Eligibility Determination Subsystem[2]
   - *3.1 Student Eligibility Determination
   - *3.2 Optional Validation

4. Student Benefit Calculation Subsystem[2]
   - *4.1 Institutional Determination of Loan Limits
   - 4.2 Lender Determination of Loan Amount
   - 4.3 Guarantee Approval

5. Funds Disbursement Subsystem
   - 5.1 Issuance of Promissory Note
   - 5.2 Loan Disbursement
   - *5.3 Refunds
   - 5.4 Note Transfer and/or Servicing Contract
   - 5.5 Interest and Special Allowance Payments
   - 5.6 ED Advances to GAs
   - 5.7 Administrative Cost Allowance Payment to GAs

6. Account Reconciliation Subsystem
   - 6.1 Enrollment Status Reporting
   - 6.2 Loan Consolidation
   - 6.3 Development of Repayment Schedule
   - 6.4 Loan Repayment
   - 6.5 Repayment Deferment
   - 6.6 Claims and Collections
   - 6.7 Lender Reporting
   - 6.8 GA Reporting
   - 6.9 Lender Reviews
   - 6.10 GA Audits
   - 6.11 ED Program Review of GAs
   - *6.12 Institutional Audit
   - *6.13 ED Program Review of Institutions

THE CAMPUS-BASED COMPONENT (CONT'D)

2. Student Application Subsystem
   - *2.1 Student Application

3. Student Eligibility Determination Subsystem[2]
   - *3.1 Student Eligibility Determination
   - *3.2 Optional Validation

4. Student Benefit Calculation Subsystem[2]
   - *4.1 Student Award Calculation

5. Funds Disbursement Subsystem
   - 5.1 ED Disbursement to Institutions[3]
   - 5.2 Award Acceptance
   - 5.3 SEOG Disbursement
   - 5.4 NDSL Disbursement
   - 5.5 CW-S Disbursement
   - *5.6 Refunds

6. Account Reconciliation Subsystem
   - 6.1 SEOG Reconciliation
   - 6.2 CW-S Reconciliation
   - 6.3 NDSL Repayment
   - 6.4 NDSL Deferment
   - 6.5 NDSL Cancellation
   - 6.6 NDSL Collections
   - 6.7 NDSL Reconciliation
   - *6.8 Institutional Audit
   - *6.9 ED Program Review of Institutions

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[2]The starred activities under these subsystems are generally integrated at the institutional level, when the financial aid office determines aid packages for each student.

[3]The initial disbursement of Pell and Campus-Based funds is completely integrated.

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